THE HORTICULTURIST

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Practical Hints to Fruit-Growers.

BY H. T. WILLIAMS.

No. 5.—The Renovation of Old Orchards.

THE fact is too plainly apparent that, throughout our Eastern and Middle States, there are to be found immense numbers of orchards whose days of usefulness and productiveness are apparently over, and the trees in a state either of neglect or rapid decay.

The eager inquiry continually comes up in the journals of the day, or at the discussions of horticultural societies, *can they be saved*, and *how?*

We are among those who believe that if a tree is rightly planted, and carefully protected from insects or cold winds, judiciously pruned, and at proper times, using liberal quantities of manure, no fruit-grower will ever have occasion to utter the oft-repeated complaint, "*My fruit-trees are dying out.*"

We think that the causes of the decline and decay of all the old orchards, which once were such a pride and a glory to our country citizens, are not attributable to atmospheric influences, or a changed climate alone, but chiefly, yes, almost solely, to *man's neglect.*

If growers would only cultivate their trees as well as their gardens, how little would be said as to the decay of our orchards.

But having a poor orchard on our hands, how shall we treat it?

1st.—Let every farmer who has a poor decayed, diseased tree, take a ladder in one hand and a pruning-knife in the other, climb up into its branches and cut out all dead or diseased limbs, leaving only those which are perfectly healthy; next with a hoe or rough iron instrument scrape thoroughly the rough, coarse bark up and down several times, then wash thoroughly either with water containing a solution of potash, or with the lye from wood-ashes; go down still deeper and dig up the ground immediately around the trunk of the tree, and clear out all worms, all dead and diseased wood and roots, turn up well every inch of the soil under the tree and beyond the edges of its branches. At a distance of six or eight feet from the trunk of the tree, or immediately under the edge of the branches, dig a deep trench two feet deep and as many wide, entirely around the tree, and replace with fresh rich earth from another spot, well mixed with manure or rich earth; every fall top-dress with well rotted manure, and every summer mulch the ground all around well with coarse hay or litter; get wood-ashes at any cost, at first outset, and apply liberally under the tree at time of first stirring. When shortening in the roots, also thin out the head of the tree, but under no circumstances lop off large healthy limbs here and there, nor

prune carelessly and recklessly. Keep the ground between the trees well cultivated, and entirely free from grass, and the grower who has the patience to wait as well as the energy to renovate thoroughly will find his orchard again returning to thriftiness and productiveness to a degree that will gladden his eyes. Although a renovated orchard can never have the prospects of life that a young orchard possesses, yet for five, six, or ten years an old orchard rejuvenated can be made to produce sufficiently remunerative returns. After that time, if still failing, cut them down, for they cumber the ground, and replant with young trees.

2d.—Another method, and an eminently successful one too, is to *regraft the stock with other varieties.* It is certainly far easier to cut down and despoil a tree than to replace one. So long as the tree is not radically diseased or rotten, but simply neglected, moss-covered, and unpruned, its fruit likewise degenerated until all its characteristics of size, form, color, and flavor are changed, these trees may by judicious methods be so restored as not only to be profitable in their own fruit, but as stocks for grafting, forming, if desirable, entirely new heads. We remember several orchards thus treated. There were two orchards twenty to twenty-five years old, merely divided by a division fence, the general condition being precisely the same—the fruit in all its varieties being of the least possible value, extremely small, knotty, and bitter, almost unrecognizable. At last one of them was rejuvenated by trenching, special manuring, cleaning the bark by scraping, washing, etc., and one-third of the top *regrafted* with *choice kinds* every year, until the whole was done. A complete and thorough change took place; nothing could exceed the health of the new wood and grafts, while their growth and maturity was extraordinary; the foliage, which before was small and sickly, and usually fell off at mid-summer, changed in every particular, becoming large, green, and full of vigor, while their neighbors, on the other side of the fence, left untouched, resigned to nature's skill and the friendly offices of grassy roots, were denuded prematurely of their leaves, seared by neglect, and died.

A practical fruit-grower, who was asked the question whether it were best to plant a new orchard or to renovate an old one, replied, "I should say renovate the old one first, by all means, because your labor can be made to pay a great deal quicker on the old orchard than on the new." Newly-grafted trees will begin to bear in three or four years, and continue to increase year after year; while the improvement of the stock and varieties of fruits in the orchard will be a most valuable item. Old orchards that are allowed to run to grass should be dug up every season; and if the whole orchard can not be cleared of the grass, do it certainly as far out as the branches extend. If the orchard is near the pig-pen or poultry-yard, let them have free run of the orchard through the warm season, for they will eat and destroy most of the windfalls under the trees, and also keep the soil well stirred in search of worms. *Scraping the trees*, too, at times of pruning, is also important, and all moss or rough bark should be entirely removed. This can be done best directly after a heavy storm, as the bark and moss will then be in a right condition to come off. After this cleaning, a wash made of wood-ash lye, or pot-ash water, should be put on the trunks and large limbs, which will kill all insects and larvæ, giving to the bark a smooth appearance. Old trees should not have their tops all removed at once, but gradually, say one third every year, cutting off the southern portion first. Pruning should be done regularly every year, and then only small limbs; all the tools necessary are a sharp hand-saw, a fine pruning-saw, and a pruning-knife.

The *apple-tree borer* can only be eradicated successfully by hunting him to the end of his hole with a fine wire, and killing him: frequently the trunk is covered for a foot above and below the surface of the ground with paper tarred or smeared with tobacco, and has proved a good remedy; but it needs removing every year, and does not prevent the borer from burrowing into the crotches of the tree higher up. A vigorous personal inspection of fruit-trees at least three times during each growing season is the only method for perfect freedom from insects.

3d.—Fruit-growers too often neglect the importance of *draining.* Many orchards we have seen located in wet lands, full of superabundant moisture, clogging up the tree and inducing disease. By draining the same, the trees have been brought back to fruitfulness, the ground made drier and more porous. Draining prevents too succulent a growth, and makes better, sounder wood. Clay lands ought always to be drained if they are used for orchards.

4th.—Another successful method of treatment is in supplying abundance of *natural manure.* If we could advise all the fruit-growers of the country at one grand mass-meeting, we would say, plant your trees on *new* land ; and secondly, manure with *natural manures.* By this we mean leaves, leaf-mould, wood manure, decayed forest earth, and wood-ashes. It is no cause for wonder that so many of our fruit-trees fail, because they have exhausted from the soil all the possible elements they could obtain for their support ; and if their roots are clogged up with an immense fibrous mass of grass, disputing the sovereignty of the ground and extracting all that *it* possibly can find, we need not stop to consider "scientific truths," for practice will tell us too plainly the policy of "grass in orchards" is a source of deep injury. It is a good axiom for any fruit-grower to follow out, "*when fruit-trees occupy the ground, nothing else should.*" Protect your trees against prevailing winds, examine constantly for worms or insects, keep pruning off all unhealthy limbs, repay to the tree every year something to compensate it for its bountiful crop, and we may all yet see our orchards gladdening our eyes with branches *laden deeply down* with delicious fruit, and the "*dying-out day*" still be far in the future.

No. 6.—Fertilizers for Strawberries and Small Fruits.

WE should as soon grow a corn crop in a forest as to expect a good strawberry crop without the use of manures. We are aware that many believe in letting the blackberry find its nourishment where it can, and it is pretty generally known that it will thrive well on soils where no other fruit can grow ; but this does not alter the fact that judicious fertilization on any soil whatever returns back to the giver abundant crops of fruit over and over again. The editor has frequently noticed the shabby treatment of strawberry patches here and there throughout the country, and has watched the progress of some of them from the time of planting until fruiting.

In nearly every case where manuring or cultivation was neglected, the crop of fruit was small, and the price realized very low. While, on the other hand, wherever the fruit grounds were well manured and cultivated, the berries were larger, sweeter, better picked, and brought a better price in market. Hence, we say, *it pays to manure all kinds of small fruits liberally.* It will never pay a man to trust to the natural fertility of his soil.

Wherever a grower can command a good quantity of stable or barnyard manure, let him apply it broadcast before planting, or as a mulch over the plants during the winter ; but where this is scarce or dear, other articles must be used. All fertilizers containing *potash* are splendid in their effects. A pound of potash dissolved in a barrel of water will make the runners grow amazingly.

Wood ashes unleached are, without doubt, the very best concentrated manure to be found. We saw a remarkable instance of this last summer, when a number of runners cut off from the parent plant happened to be planted in a field just where there remained the ashes of a bonfire ; before the end of the summer, the runners were larger than their parents. Since then we have bought up all the ashes we could find, and consider them cheap at twenty cents per bushel.

Next to *ashes, pure bone-meal* is a good article.

We experimented last year with bone-meal and several superphosphates side by side, and the bone-meal produced marked effects of superiority over the other—the price, too, is from $10 to $20 less than the other article. Superphosphates vary very much in their effects ; some are excellent articles, others are quite indifferent. It will pay any grower to use a good superphosphate on any of his fruits.

Frequent application should be made. We applied last year three doses, each of 700 lbs. per acre, scattering directly upon the plants. After the first year of bearing, only one application will be necessary, namely, after fruiting.

It is not best to use highly prepared ammoniacal manures. Those fertilizers containing soluble phosphates are sufficient.

We believe that pure bone-meal and wood-ashes will produce stronger, healthier plants, and a greater abundance of good, solid, well-flavored fruit, than any thing else in the world. We advise growers to get all they can and use them plentifully.

Distances between Orchard Trees.

I SEE by a late number of the *Western Rural* some enthusiast takes THE HORTICULTURIST in hand for certain instructions upon this subject. "Buckeye Boy" seems alarmed lest his efforts come out cider, which certainly would be bad. But we are not so much alarmed at the too close proximity of trees in the orchard. Indeed, one of the very best faults which befalls an orchardist is this same too close planting, especially upon the prairies or other windy exposures. The West is being taught protection in all its beauties, from the most expressive and elaborate modes to the simplest and cheapest which is within the reach of all. An extensive grape-grower here, a short time since, being asked what was the best protection he would give his vines, answered, "Grape vines." The idea was, that upon the outskirts of his vineyard he would leave a row unpruned, simply training it upon a trellis, and this in mass would form his best protection. The same may, to a great extent, be said of an apple orchard: plant close, the first ten years there will be no trouble for room, then, as space is required or the tops begin to interlock and crowd, alternate trees may be removed. In this way half the trees protect the other half, which half are in a thrifty, good condition, and meanwhile gaining strength and hardiness to endure the more bold exposures incumbent upon them after the thinning process has commenced. "Buckeye Boy" must remember that Flushing is not all the world; that we in Wisconsin, in fact all west of the lakes, have winds and storms to contend with that our neighbors "across the waters" (lakes) know nothing of. The State Horticultural Society recommend planting trees *not over* twenty feet apart, and some members are planting much nearer than this. We know one orchardist of 4000 trees commenced at thirty feet apart, and now is planting but little more than half this distance. And he assured me but a few days since, the close planting is much the best. Extremes there may be, but no fruit-grower in Wisconsin will regret planting his apple orchard from fifteen to twenty feet apart. And if he has some of the fast growing deciduous trees, like soft maple or elm, to intersperse among the apple-trees, then to be removed as age and size should demand the room, he can use them to good advantage in this way. In a prairie country the trees thus planted and removed will be worth for fuel at least the first cost, and probably much more. O. S. W.

MADISON, WIS.

A French Roof Suburban Residence.

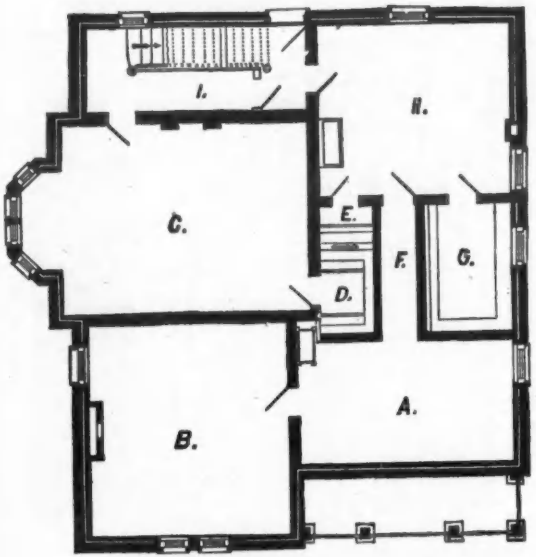
THE French roof style of housebuilding has become so suddenly and widely popular that it is not strange many blunders have been made, and many very ugly residences erected. We can call to mind, in the neighborhood of New-York alone, a village which caught the fever just after importation, and every one who wished to build considered *that* the only fashionable style, and would choose no others. Country carpenters, with no more ideas of taste and fitness than a dumb animal, conceived plans of the most *outré* character, and, when completed, a collection of more ridiculous houses never was seen. The finest example of the French roof—or, as it is better called, the Mansard roof—in this country, is that on the Metropolitan Savings Bank, opposite Cooper Institute, New-York; a more beautiful specimen one could hardly ask for.

The French roof is adapted chiefly to city uses, either for public or private purposes; and if good plans are used, an exterior ornamental effect and an interior convenience can be produced unequaled by any other style of architecture. For suburban purposes it is pardonable, if tastefully carried out; but for the country generally, wholly incongruous and inappropriate.

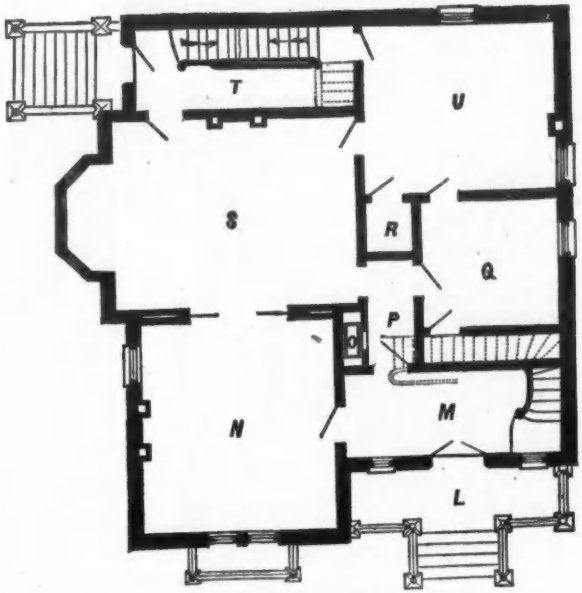
The French roof is perfect only when complete with a railing at the top; without this, it is a nondescript; with it, it possesses beauty and dignity.

The illustration we present this month, designed by G. P. Randall, of Chicago, Ill., is one of the very few cases we have seen where a house with this form of roof is made to look pretty without the railing. The building is intended to be constructed of brick, with the Mansard roof sloping easily inward, and consisting of two floors and a base-

PLAN FOR COUNTRY RESIDENCE, DESIGNED BY G. P. RANDALL, ARCHITECT.



The Basement.



The Principal Floor.

ment. The ground area measures 38 by 45 feet, and the following description of the rooms corresponds with the plans given:

BASEMENT.—A, wood and store-room; B, vegetable cellar; C, dining-room; D and E, china closets; F, passage; G, pantry; H, kitchen; I, hall.

PRINCIPAL FLOOR.—L, piazza; M, hall; N, parlor; O, dumb-waiter; P, passage; Q, bedroom; R, closet; S, sitting-room; T, hall; U, bedroom.

The cost of this house will be $10,000, according to the ground area given. The same shape of house can be preserved, while the dimensions may be increased and more rooms or other conveniences added; but the general plan is one of taste and beauty.

The White Birch.—(Betula alba.)

BY W. WAYBRIDGE, ESQ.

"Not distant far, the birch is seen to rise."—DELILLE.

IN setting out your ornamental trees, pray do not overlook my favorite birch. It is the "lady tree" of the American forest, and deserves from me a word of commendation. Slender, lithe, and graceful, it lifts its fairy form in charming contrast with the sturdy oak and sombre fir, imparting life, variety, and beauty to the grove. Ten thousand sweet associations cluster round this elegant and decorative tree; and the sight of it in my travels always brings distinctly to my mind the dear and hallowed scenes of early home. On the margin of a streamlet, stored with pickerel and trout, which swept along beside my father's humble dwelling, grew a clustering row of tall and thrifty birches. [*B. populifolia.*] My earliest recollections linger with them, and their beauty haunts me still.

"There broke the light upon my early view,
There first my beating heart to pleasure flew."

Well I remember with what exquisite delight I used to pick the pendent "tassels," or watch the swelling of the buds, or the opening of the delicately tinted leaf in springtime. The twigs I cut for fagots, the delicate rind I peeled for "boxes" or for "torches." In the long summer days, I used to sit and gaze upon the glossy, trembling leaves which danced as broken waves of ocean in the unnumbered gleams of sunlight, or, stealing quietly beneath the shade, entice the speckled trout from the deep pool the brooklet made in sweeping round a granite rock impeding it. The early falling of the "sere and yellow leaf" into the stream reminded me that the "eventide of the year" was coming; and the twigs glimmering as gems in crystal screen to me betokened the immediate presence of the stern winter-king. Long since that beautiful line of birch has disappeared, a few decaying timbers indicate the site of the old mill; but the stream, by reason of the clearings at the source, has dwindled to a little rill too slender in summer even to afford the trout and pickerel a comfortable hiding-place. Yet the lessons which those fresh and graceful birches taught me perish never. The birch is therefore my sylvan goddess, my arborean monitor, my "affinity;" it taught me botany, poetry, philosophy in my boyhood; it has ever met me as a dear old friend along the checkered pathway of my life; it even now is sending forth its "fragrant flame" to cheer my study while it tells of it.

This tree thrives alike in the lightest and the heaviest soil; it holds to life with fierce tenacity, and attains to its full growth in twelve or fifteen years. It is a profitable as well as ornamental tree. Of its stem, strong brooms and baskets, shoe-pegs, clothespins, chair-bottoms, mattresses, pen-holders, and buttons are manufactured; the smaller trees are used for hoops; the branches, to say nothing of the twigs for discipline, make good cords for building fences, and the wood affords most excellent charcoal. The bark (*B. papyracea*) is used for covering buildings, for making paper, and for the construction of the "light canoe." The white rind of the bark is used in tanning the well-known Russia leather red. A wine is made in Scotland from the sap. Thus, like the camel, every part is valuable. So then for the sake of the utility, if you can not with your uncle Waybridge see the beauty, please plant the birch.

"BRIGHTSIDE," N. BILLERICA, MASS., March 4, 1869.

The Stark Apple.

BY C. M. HOVEY, BOSTON, MASS.

IS the Stark a new apple? Shall we accept it as such, or shall we doubt the accuracy of the statement? We are all familiar with the many errors of this kind which have been prevalent for years, and which have done much to disappoint cultivators, and annoy them so greatly, that many refuse to try a really new and meritorious fruit, fearing it may be an old sort under a new name. The Putnam russet is a well-known instance of the pertinacity with which an old variety was claimed as a new one, and the Hunt russet is another.

We never heard of the Stark apple till very recently—perhaps unpardonable ignorance—as it appears a description was given of it in the *Prairie Farmer*, by Dr. Warder; but as we look to horticultural and pomological works as the legitimate sources of information, it escaped our notice.

At the late meeting of the Committee of the American Pomological Society in New-York, several specimens of apples were exhibited under the name of Stark, with a long account of it by some one who was introducing the apple. We were quite surprised to recognize a very old acquaintance, the Pennock's Red Winter. All the pomologists present so decided, and it was then that Dr. Warder's notice was shown to us which still more surprised us.

The fact has escaped our attention till now, when finding a bushel of the apples in our cellar, with specimens before us, we are reminded of the error, and the importance of correcting it before its dissemination as the "Stark."

Already the Pennock, according to Dr. Warder, has three synonyms, and Mr. Downing gives it five. These are sufficient for an apple possessing only one good quality—that of keeping till July.

If the variety could be traced to its origin, there might be some hope of its proving new and distinct, for two fruits may resemble each other and yet be unlike. But the history of the Stark is unknown, and rests upon the fact that it has "long been cultivated in Ohio, and is valued as a market variety."

In order to see how near the Stark and Pennock resemble each other, from a description, we copy that of the former by Dr. Warder, from the *Prairie Farmer*, and of the Pennock, from his *American Pomology:*

STARK.	PENNOCK.
Fruit, globular, regular, large.	Fruit, large, conic oblate, often unequal, lop-sided.
Surface, smooth, yellow, nearly covered with mixed red, splashed crimson.	Surface, greenish yellow, covered with mixed and striped red.
Dots, numerous, medium dark.	Dots, large, irregular, browned.
Basin, regular, rather wide.	Basin, wide, rather deep.
Eye, medium, closed.	Eye, large, open.
Cavity, deep, regular.	Cavity, wide, deep, regular.
Stem, medium to long.	Stem, short.
Core, medium, closed.	Core, irregular, closed.
Seeds, few, imperfect.	Seeds, numerous, regular, plump.
Flesh, yellow, breaking juicy.	Flesh, yellow, breaking.

Dr. Warder "can not commend the Stark for the dessert," and he pronounces the Pennock good for "cooking and market only"—in which the doctor is correct.

We trust that we may have no more errors of this kind; our fruits are numerous enough and good enough for us, until we can be sure we are not adding to our collections those we rejected years ago. Besides this, it is time to demand more accuracy in bringing forward new varieties. It is disappointment enough to purchase a really new thing and have it prove worthless, without getting an old one which we know to be so.

Cultivation of the Raspberry.

BY THE EDITOR.

NEXT to the grape, there is probably none of the small fruits that require such good judgment in choice of varieties, soil, and method of cultivation as the raspberry. And yet there is no fruit which, if well cared for, gives such a genuine pleasure to the horticulturist, as a fine, luxuriant row of healthy raspberry plants, their deep green leaves glistening in the sun, or hiding in each other's shade, graced with the long, pendent stems of beautiful fruit of vari-colored hues. Both as a market and as a family fruit, there can hardly be any thing more choice or delicious. City visitors to the gardens of their country friends have been accustomed to the sight of strawberry-beds, and rows of blackberries, or apple and pear-trees here and there; but when they discover by the side of the fence a row of raspberries, the berries large, round, plump, with such beautiful colors of orange, or white or scarlet, and when the delicious taste justifies the expectations of their eyes, nothing can excel their admiration. Their praises we think are well bestowed. The raspberry *is*, without doubt, the choicest family and garden fruit now grown. The raspberry is easily grown if the right kind and the right soil are selected; but how difficult it is to make a right choice! The Hudson River Antwerp may be desirable to grow, by any one throughout the country; and yet out of the latitude of the Hudson River the instances of success are so few as to scarcely deserve notice. The Brinckle's orange, or Fastolff, or Franconia may seem desirable, and splendid berries they are if successful; but if the soil is sandy and burns them up, or if their canes are not protected during winter, the cultivator may look long for that delightful crop he expects, and never see it. The fact is, that raspberries can not be grown in any place under the sun without a good *rich, moist soil.* The purple cane and red raspberries particularly need a good rich soil; the black-caps may be grown on sandy loam and produce fair crops, but a richer soil will fully double the produce. Sandy, gravelly soils invariably need frequent and abundant manuring. Deepening the soil and frequent cultivation, too, are requisite; lastly, *mulching.* Perhaps no part of the culture of this fruit is so important and has so great an influence on the success of the crop as a careful mulching. This supplies moisture—moisture is a partial fertilizer; all combined give to the plant the right elements of growth, and cause it to attain a vigor and a luxuriance it might long look for in other ways. The experiment was tried last season at the Wallingford Community, Ct., as to the comparative benefits of mulching or not; and it was found that the produce from the *mulched* portion exceeded three fold that of the other not so treated. Mulching should be applied invariably during the fruiting season. It can afterward be removed, the ground carefully cultivated, and then replaced for fall or winter protection. The *distances* for planting are unimportant. For market uses we would prefer rows 4 to 5 feet apart and 3 feet in the row, carefully trained to stakes. With the black-caps, a trellis will be found advisable, as their long stems are often unmanageable and in the way. It pays to treat even black-caps well. We saw last season two different systems of culture—one in the field, the other in the garden. The first was not manured, the second was richly. The first hardly yielded 15 bushels per acre, the second yielded a bushel from only one trellis *ten feet* long. The growth and production were simply astonishing.

If the soil is rich and heavy enough to admit of a relief from the expensive process of mulching, then resort must be had to good cultivation, keeping the soil mellow and free from weeds. Keep the plant well pruned by cutting out all the old wood, and also all young and weak shoots that can be spared. The height of the red and purple cane raspberries should be 3½ to 4 feet. As to time of planting, we have always preferred the fall; for the best of reasons, that the plants gain a growth the next season fully fifty per cent over those planted in the spring. Black-caps must invariably be planted in the fall, as they are earlier in their growth than any other variety. The profits of raspberry culture are yet undetermined, rarely or never exceeding $500 per acre. Their culture is not so widely extended as to allow much opportunity for examination of this point, but the prices per quart obtained are certainly very remunerative. If a grower obtains $250 to $350 per acre for any of his raspberry crops, he can be contented,

Instances of $1000 per acre from new kinds are quoted, but the people generally never attain such figures. A fair rule in fruit-culture is to treat your fruits as well as your children or yourself, and it will not be necessary to make estimates, for the profits will come easily and be well used. Lucky is that fruit-grower who treats his vines well.

The Salem Grape.

NEXT to the strawberry, there is probably no fruit so popular for family use as the grape. But every year, for the past five or ten, has witnessed the advent of so many new grapes, pushed with all the power of forcible advertising, with exaggerated claims of superiority, which on trial have produced so unsatisfactory results and given so much disappointment, that it is not strange every new grape is looked upon either with incredulity or else it is let alone at a respectful distance. The success of grape culture does not depend upon one single variety nor one location, but is a record of successes in different soils, different climates, and with different modes of cultivation. The variety that will fail in Massachusetts may succeed in New-York, and may be still better in the West; one grape may be eminently successful at the North, and fail entirely at the South.

Hence we say that enthusiastic reports of the success of a new grape, or, in fact, any fruit, at the place of origination, must not be accepted as a settled point in its favor.

Blessed is the man who produces a really good grape, but thrice blessed if it will by its nature grace the vineyard or the garden of *every* cultivator of the soil in *all* parts of the country. The Concord is the grape for all Americans, until a better can be found; and surely it is worth any amount of exertion to produce that *ultima Thule.*

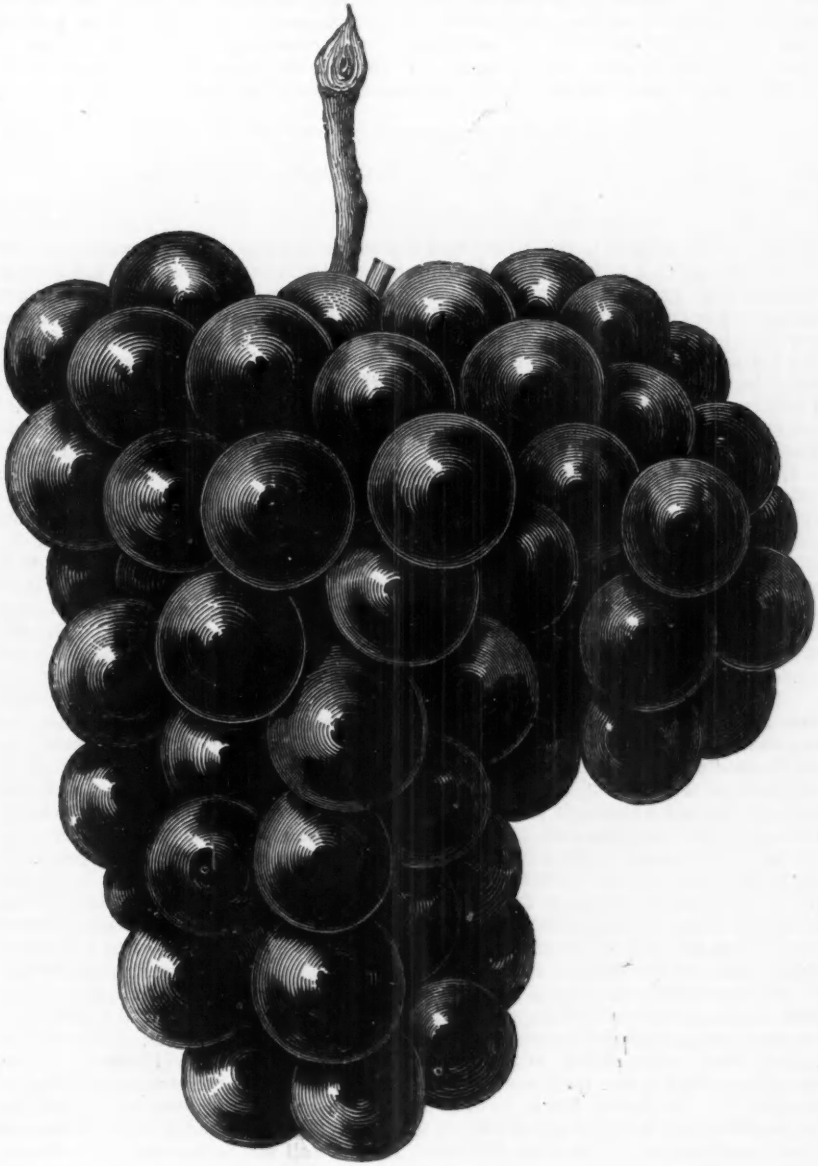
Our attention has for some time been directed to the Salem Grape, and from several opportunities for observation we are disposed to speak in its favor.

Introduced two years ago, by a man whose name is associated with all that is meritorious in horticulture, it has gradually found its way into the hands of careful and conscientious fruit-growers and horticulturists, who have given it a practical test before indorsement, and now it comes forth well sustained in all that is claimed for it.

A patient man never wearies in well-doing. The Rogers Hybrids have been for a number of years favorably known to the public, and some of them (Nos. 4, 9, 15, 19) have made a valuable record; but with further home tests, the Salem at last appeared, and was declared eminently superior to them all.

Like Nos. 4, 15, and 44, the Salem is a hybrid between a native grape and the Black Hamburg; the bunch is large and compact, rather short, but very broad, the berry is as large as the Hamburg, of a light chestnut or Catawba color, thin-skinned, perfectly free from hard pulp, very sweet and sprightly, with a delicate aromatic flavor: for a wine or a table grape, excellent. It is as early and as hardy as the Delaware or Hartford, and as far as tried in the past six years has never failed to ripen its fruit, even in the most unfavorable seasons. Mr. Rogers at the time of its introduction stated that for earliness, hardiness, great vigor of vine, size and quality of fruit, he believed it had no equal among all the then new varieties known to the American public. Let us see whether these claims have been justified. We have personally tasted the grape, and the description of quality is not exaggerated; the vines in our possession show a remarkably vigorous growth, although not fruiting. In a score or more of other hands with longer experience than our own, and in different parts of the country, the testimony comes back from prominent fruit-growers as follows: "It is a hardy vine, a vigorous grower, with a strong leaf; the fruit ripens early, is very large and showy, an abundant bearer, fruit of an attractive appearance, good quality, and possesses eminent characteristics fitting it well as a valuable market variety."

We saw the grape first two years ago at the Exhibition of the Lake Shore Grape Growers' Association, and the uniformly favorable impression it then made upon all visitors, and also subsequently at the next Exhibition, in 1868, culminated in the award of the First Premium for the *best six clusters of fruit, quality to rule.* We are aware of the



The Salem Grape.

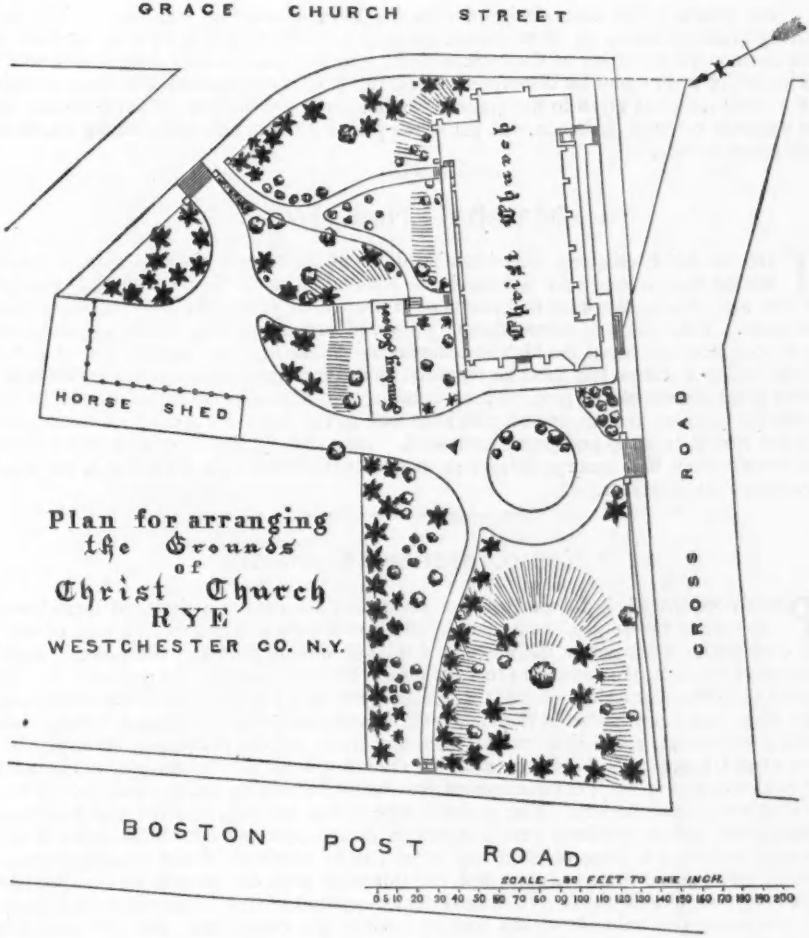
injudiciousness of indorsing any new grape for general cultivation throughout the country, but as long as the people are led to believe that the Concord is the *only grape* that will succeed anywhere *without fail*, and still is far from perfect, so long will we welcome every new variety which will give us the same admirable characteristics of growth and productiveness but with a better flavor. We consider the Salem a good approximation to the desired result, and one of the most valuable new grapes now before the public.

Home Scenes.

BY B. S. OLMSTEAD, RYE, N. Y.

THE plan presented in this paper may not at first appear quite appropriate to illustrate one of a series entitled "Home Scenes." Yet is it not? Do not most of us regard our parish church as a spot very near and dear to us? Is it not an integral part of our homes, one that we would be loath, very loath, to part with? Do not some of the most heart-felt of home associations cluster around it? The baptism, the wedding, the funeral, do not they make it a sacred place, consecrating it to us by events which bind the members of our families more closely than ever to each other? And to the Christian man is it not a type of that future home up toward which his hope and faith are ever drawing him—the place of communion with his Father and Saviour, that Elder Brother—and of pleasant intercourse with his brethren, his fellow-Christians? Shall we not, then, gather around such a spot some of the adornments which we lavish upon our dwellings? Shall we not strive to make of its surroundings a pleasant spot in the memory of the passer-by, an allurement to our children to draw them within its sacred inclosure, a place where nothing discordant shall jar upon its quiet attractiveness, and where all shall be in harmony with the peaceful spirit with which we should draw near to its services? The church referred to in the accompanying place has an interesting history. Founded under the auspices of the venerable Society for the Propagation of the Gospel in Foreign Parts, in England, nearly two hundred years ago, it has seen many eventful changes. Twice it has been destroyed by fire; and now, upon the same old site, a new edifice, larger and more beautiful than any before, has just been erected.

The ground on which it stands is very rough and unshapely, scarcely any thing more than a mass of rock, and of such a contour that access to the church is by no means easy or pleasant. The object of this plan is to correct these imperfections, and to make the whole convenient in its arrangements and attractive in its appearance. Situated as this church is, in the midst of a rural parish, gathering its worshipers from an area of some three or four miles radius, it is necessary to make ample provision for the approach of carriages. At the same time, the convenience and safety of pedestrians and Sunday-school children must not be lost sight of. To fulfill these requirements, a flagging is designed to extend around the sides of the church from the choir entrance at K, passing by the entrance door opposite the Sunday-school at I, the main entrance at H, the town entrance at G, and so on to the entrance to the vestry at E. This last entrance communicates with the body of the church also, and will probably be used by that part of the congregation whose seats are near it. The spaces inside of this flagging and between the buttresses are to be kept in grass. On the south side, a low bank wall is to extend from the south-west corner of the grounds to the main entrance gate at B, thence passing the town and along the south of the church to the south-east corner. This wall, directly in front of the church, will be finished as a terrace-wall, and will serve to connect the edifice properly with the ground. On the north side, another terrace-wall will be constructed from the Sunday-school room to the choir door, and will serve as a connecting link between the two buildings and the ground, and will likewise apparently elevate the church, an effect to be desired on this side. A bank wall will be constructed on the east of the lot, with an entrance gate at Y, leading to the sheds. Bank walls already inclose the lot on its other sides. Outside of the wall a sidewalk, ten feet in width, is proposed. Along this sidewalk, on the south of the church, and along the flagging on the west end, will be room for some ten carriages to stand in line, and the walls are of sufficient width



GROUNDS OF GRACE CHURCH, RYE, WESTCHESTER CO., N. Y.

to allow them to turn out of line and pass on to their destination, as soon as they have deposited or received their passengers. By means of the flagging and the sidewalk, the occupants of these carriages will be able to reach them without waiting for others in advance to receive their loads at the entrance doors. A small entrance gate at the west end of the lot opens to a foot-walk leading up to the church, and another on the east to walks leading up to the church, the choir, and the Sunday-school room.

The children of the Sunday-school will pass out from their school-room to the church door at I, and the arrangements are such that all danger from horses and carriages is avoided.

The planting has been designed with the hope of creating sufficient variety, and giving to the whole an air of seclusion, quiet, rest. The principle of unity prevails in the harmonious blending of the various parts. In the convenience of arrangement the principle of utility may be discovered, whilst the law of association has been brought into action, and has given to the grounds the holly, the ivy, the yew, and, it is hoped, not in vain, the cedar of Lebanon. A list of the planting would be added, but our lengthening paper forbids.

Marshal Neil Rose.

THIS beautiful climbing rose, introduced about four years since, is now foremost among the few that have sustained the reputation given them when first brought before the public. We have had plants of it over three years, and can vouch for its excellence. The rose is of a deep canary yellow, of very large size, and of exquisite fragrance. It has received the highest commendation and first-class certificates at all the English flower-shows, and must be regarded as a great acquisition. When grown in the open border, it should be protected by throwing the branches upon the ground before hard frosts occur, and placing over them as well as the roots a covering of thick sods. In the spring, train up and prune as desired. As a rose for the rafter of a green-house or conservatory, it is unsurpassed for its magnificent blooms. At the South, it will need no protection whatever.

Experimental Gardens.

PROFESSIONAL horticulturists are proverbial for having a desire to furnish new things, or "novelties," as termed by the books, then add to this their love of gain, in common with the rest of the world, and is it any wonder that we "the people" sometimes get "sold" in our ambition to show off the first new things of the season? In view of this, and the damaging effects it is having upon horticultural enterprises throughout the West, and especially so in Wisconsin, the Wisconsin State Horticultural Society, composed of earnest, enthusiastic nurserymen and fruit-growers, petitioned the Regents of the State University, in February, 1868, for the use of some portion of their farm for their Society to carry on such experiments as they might be able to, under the supervision of the officers of the Society. The grounds were readily granted, and the result is, that during the first season there were donated to the society about *three thousand* trees and plants, including a large collection of grapes, all of which are doing remarkably well. Nurserymen of the State are contemplating donating twice the amount for next spring's planting, and, with the thousand dollars the State appropriates for the benefit of the Society, it is expected that valuable results may grow out of the enterprise. But you ask, How is it to be gained? *The objects* of the experimental garden are to thoroughly test every thing, either fruit-tree, vine, or shrubs, that may come under their observation, upon these grounds; further to collect valuable specimens of the wild fruits, and to try by cultivation and pruning what can be made out of them by way of improvement. They also solicit, and, where this will not gain the object sought, will in time, as their means may increase, purchase newer novelty plants. In this way our Society hope to thoroughly test the hardiness and quality of fruits. This can readily be done in the class of small

Marshal Neil Rose.

fruits, and the result be seen and felt within a few years. Larger fruits will require more time. New seedling strawberries, raspberries, currants, and grapes are especially solicited; for of these very much is expected, and special attention is being devoted to their cultivation in the West, as from these it is we have reason to hope and expect much. A registry is kept of donor, what donated, when received, condition, and every thing connected with the history of same which seems to be of interest. This history will be continued, noting from year to year the success which attends the same. And the society expects to gain a celebrity in this way that will place it as authority to the people of Wisconsin upon the fruits to plant in the State. Will the East come to our assistance, and contribute of their mite such things as they have to spare and may hope to sell in our State? The West pays the East hundreds of thousands of dollars annually for fruit-trees. Is it any more than reasonable to ask that they donate to our grounds of the abundance of their samples, at least of what they offer to our neighbors for their gardens? We of the West say not. We wait their answer, assuring them every thing is to be "done decently and in order," receiving the best of care and attention, with the hope that good may come of it; and as Wisconsin is the pioneer in a State experimental garden, may our example be such that other States, even local societies, may see our good works and do likewise. We aspire to the time when the experiments here made will be the ruling guide for fruit-growers in the State, and no tree can be sold which is not on the Society's list as having been thoroughly tested and its merits known. Thus do we desire to compare the relative value of Eastern and Western trees. Again we would inquire, will the East show us their hand?

O. S. WILLEY.

MADISON, WIS.

Manure for Fruit-Trees.

BY THE EDITOR.

WHETHER fruit-growers know it or not, it is still a practical truth that fruit-trees differ in the quality and quantity of fertilizing material necessary for their nourishment. Almost every one accustomed to observe the most common things of country life has observed that in many neighborhoods orchards are found bearing large crops of fine fruit, while others only a half mile off, and apparently on as good soil, and as well treated, produce only small crops; or again, in one part of the country the fruit in one orchard will be large and fair, while in another it is always spotted and defective. Some orchards cease bearing while yet far from a worn-out or dying condition, and the application of barnyard manure, while helping materially, is still not perfect in its results. We have seen apple-trees thus treated, yet without producing any good effects. The trees, to be sure, grew more luxuriantly, but the fruit was still knotty and inferior. To enable us to solve this curious question, let us examine the *ashes* of the trees themselves, by the aid of chemistry, and learn of what they are made. We herewith annex a valuable table, showing the analyses of different trees:

ASH OF THE PEAR.

	Sap Wood.	Bark.
Potash,	22.25	6.20
Soda,	1.84	—
Chlorine,	0.31	1.70
Sulphuric Acid,	0.50	1.80
Phosphate of Lime,	27.22	6.50
Phosphate of Peroxide of Iron,	0.31	—
Carbonic Acid,	27.69	37.29
Lime,	12.64	30.36
Magnesia,	3.	9.40
Silex,	0.30	0.40
Coal,	0.17	0.65
Organic matter,	4.02	4.20
	100.25	98.30

ASH OF THE APPLE.

	Sap Wood.	Bark.
Potash,	16.19	4.938
Soda,	3.11	3.285
Chloride of Sodium,	0.42	0.540
Sulphate of Lime,	0.05	0.637
Phosphate of Peroxide of Iron,	0.80	0.375
Phosphate of Lime,	17.50	2.425
Phosphate of Magnesia,	0.20	——
Carbonic Acid,	29.10	44.830
Lime,	18.63	51.578
Magnesia,	8.40	0.150
Silica,	0.85	0.200
Soluble Silica,	0.80	0.400
Organic matter,	4.60	2.100
	100.65	109.450

COMMON WILD GRAPE-VINE.

	Wood.	Bark.
Potash,	20.84	1.77
Soda,	2.06	0.27
Chlorine,	0.02	0.40
Sulphuric Acid,	0.23	trace.
Phosphate of Lime,	15.40	5.04
Phosphate of Peroxide of Iron,	1.20	5.04
Carbonic Acid,	34.83	32.22
Lime,	17.33	39.32
Magnesia,	4.40	0.80
Silex,	2.80	14.00
Soluble Silica,	0.00	0.30
Coal and organic matter,	2.20	1.70
	100.21	100.86

The above analyses are of the wood and bark only, but Professor Johnson has given us the analyses of the *fruits and seeds* also:

	Potash.	Soda.	Magnesia.	Lime.	Phosphoric Acid.	Sulphuric Acid.	Silica.	Chlorine.
Grape Seeds,	28.6	....	8.6	33.9	24.0	2.5	1.1	0.3
Apple, entire fruit,	35.7	26.1	8.8	4.1	13.6	6.1	4.3	....
Pear, " "	54.7	8.5	5.2	8.0	15.3	5.7	1.5	....
Cherry, " "	51.9	2.2	5.5	7.5	16.0	5.1	9.0	1.1
Plum, " "	59.2	0.5	5.5	10.0	15.1	3.8	2.4	....

In these analyses any skeptic can see that different trees require different proportions of the same fertilizing materials, and the fact is apparent that special fertilizers can be used with success. From opportunities for good observation, we consider ammoniacal fertilizers invariably injurious—they should never be used. All fertilizers containing lime, potash, and phosphoric acid can be used very appropriately. The apple-tree needs more *lime* than any other fruit; the pear more *potash* and *phosphate of lime;* while the grape-vine needs all elements in a strong degree, and more carbonic acid or nitrogenous matter. What we have hitherto said as to *natural manures* for fruit-trees, we can now repeat with emphasis as being the most effective and best adapted to the

health of the tree. Common *wood-ashes* is invariably the cheapest material to be obtained; while lime and bones are to be obtained in almost every part of the country. Apply potash and bone-dust to the pear, lime to the apple, and all to the grape-vine. Nearly all of us know the Pelham fruit farm on the Hudson River, where annually several *thousand barrels* of fine Newtown pippins are produced, of a size, flavor, and beauty so superior to all others that it has received the title of the *best orchard in the world;* and yet the great secret of the culture of that orchard is in the *abundant use of lime.* Probably no place in America grows finer pears than we have seen raised in the neighborhood of Newark, and more particularly in the State of Delaware; and yet wherever most successful, we have found that the owners of the orchards were in the habit of using bone-dust and superphosphates. We believe that if the *grape-vine* even were supplied with all the elements it needs of bones and potash that we would have more uniform crops of nice fruit, and less mildew or other diseases. Dr. Nichols, of the Boston *Journal of Chemistry*, had the pleasure of trying an experiment of this nature on his grapes, and pronounces it an emphatic success. An intelligent cultivator of grapes, living on the borders of Lake Erie, had been more than usually successful for several seasons in growing several varieties of *foreign grapes* in the open air. At length they began to fail, even the young vines, and the mildew made its appearance to render the crop entirely worthless. At last, receiving the accidental hint, he gave one of his grape borders *a heavy dressing of wood-ashes;* these of course contained both the potash and the lime so necessary to the grape. He had the satisfaction the next season of raising a crop of fair and excellent grapes, while the other vines of the same age not thus manured bore only mildewed and worthless fruit. Now, what these cultivators have done others can do—pick up all the bones, ashes, or lime that can be readily used, and wherever a vine or a tree fails to yield fruit, apply liberally in right proportions, and you will find that these hints from this journal will be worth many hundreds of dollars to you.

Evergreen Hedges.

BY WALTER ELDER.

EVERGREEN hedges should form inclosures to all the various departments of ornamental gardening where they will thrive. To put up *dead sticks* or *cold iron* as fences to pleasure grounds and gardens, without linings of evergreens, is at war with good taste. It looks like setting up the dead to watch over the living. Notwithstanding the many wise suggestions written and spoken of the beauty that evergreen hedges impart to ornamental gardening, and the best modes of culture thereof, they are not yet so general as they ought to be. They should be universally used as inclosures. We have numerous species and varieties of evergreens that are well adapted for making good hedges—the many arbor vitæ, biotas, junipers, hemlock, yews, boxwoods, Norway fir, etc., some of which will thrive upon almost every kind of soil that is dry, or not in marshes. Where such spots occur, they may be set with osiers, to continue an unbroken live hedge. For *parks*, the Norway fir is one of the best to make a strong and thick outside hedge, and for divisions and suburban gardens arbor vitæ, hemlock, biota, juniper, tree box, yew, etc., are well adapted and give a pleasing effect. For parterres and small divisions, the dwarf boxwoods, dwarf arbor vitæ, and many other dwarfs are suitable. Every department of ornamental gardening is a *picture;* and the fences or inclosures are the *frameworks*, which either add beauty to the picture or destroy its beauty. Evergreen hedges add richness and beauty to the grounds and all the various kinds of plants thereon, as ornamental frames of precious woods finely polished, and others richly gilded, give greater graces to the picture. The cost of evergreen hedges, including the price of plants and setting them out, is about twenty-five cents per foot for tree boxwood, yew, Siberian arbor vitæ, etc., twenty inches high; and for American arbor vitæ, hemlock, Norway fir, Chinese biota, etc., twenty inches high, is about fifty cents per yard; the after-care, the three first years, in cutting up weeds about them, is about the same cost as a row of Indian corn of the same length.

Besides the beauties of evergreen hedges, their shelter is of great value in breaking off the low currents of cold air in winter which prove so destructive to the stems of many species of plants, which by their girt and density can not yield to sudden contractions by cold and burst open; or in other words, the compression of air in their cells becomes so great by sudden and severe cold as to cause explosion, just as the compression of air by fire and gunpowder rends rocks asunder. The branches being higher are not so injured by low cold currents, and being smaller and less dense, they give way to compression more readily and remain uninjured when the stems are rent. On the contrary, they are more exposed and suffer more severely from spontaneous evaporation, and are often killed by that when the stems remain sound. So as evergreen hedges save the *stems*, belts of trees protect the *branches* by checking the force of spontaneous evaporation.

It is a moderate estimation to say that evergreen hedges and belts of trees are worth ten times their cost in these respects. All horticultural improvers, for these reasons, should make fences of evergreen hedges universal, and the *dead sticks* and *cold iron* will be useful upon the railroads, etc.

From the first of April to first of June, north of Virginia, is the best time to plant out evergreen hedges, and from middle of September to first of November in the autumn is a favorable time.

Railway Gardens.

BY THE EDITOR.

TRAVELERS take pains to tell us of the neatness of the surroundings of railway stations in England and on the Continent, and the care exercised in keeping all the roadside banks of grass smoothly laid out, and regularly cut. In some large provincial towns the travelers are even treated to views of handsome railway flower-gardens or neat parks of lawn and shrubbery.

If in such countries, where land is so valuable and dearly bought, such pleasing improvements can be carried out, why can not America, with an unlimited area of cheap land, reproduce the same idea in American railway arrangements, with far more agreeable results? We have our elegant parlor cars and day and night coaches; but why not treat the passengers to views of little gems of ornamental gardening here and there, where it can be done with a very slight outlay. In our country districts there is scarcely any reason why the railroad depot buildings and surroundings could not be made of a most cheerful and ornamental character; but we see actually little or no attention paid to them, and only rare cases of choice taste.

We consider the subject worthy of discussion. It is not merely necessary to have a depot well and comfortably arranged within, or of an ornamental design and pleasing color without, but the yards, freight-house, and wood-sheds should be appropriate also, and kept in good order.

The majority of the railroad stations throughout our country are of a most disagreeable character; not only poor, shabby, comfortless, but ill-kept and with most careless or dirty surroundings.

There are some special instances, as on the half-dozen first-class lines of travel, where the prominent places are distinguished by imposing structures, and hundreds of thousands of dollars wasted on magnificent depots.

But we think railroad companies can go beyond mere building, and take in a little gardening. Not necessarily on a large scale; but in the neighborhood of their smaller stations money, taste, and time can be agreeably combined and spent to produce an increase of convenience in the provision of material beauty.

How easy it would be, in many places, to have a little bit of grassy lawn at each end of the depot or directly opposite, and surrounded by a neat fence! How easy, too, to plant on the street, near at hand, some fine shade-trees, whose luxuriant growth will, in course of time, make the neighborhood a spot of great beauty; and how easy to introduce into these grassy squares or triangles a few ornamental shrubs or evergreens, whose constant growth requires little or no attention!

Not long since, while passing over the Lake Shore Railway from Erie to Cleveland, Ohio, we observed that this idea had been carried out, and we were much pleased with the uniformly agreeable appearance of all the stations. Built after one invariable pattern, well arranged, and with very appropriate surroundings, the traveler could not fail to be favorably impressed with their cheerful looks and remember them for many years to come. The arrangements were as follows: The depots are all square, of wood, surrounded with a wide plank well elevated, three feet from the ground; from each corner of the depot these walks branch off, parallel with the railroad, to buildings at distances of one hundred or two hundred feet—on one side to the wood-house, on the other to the freight-house. The space left open between these buildings, and surrounded by these walks, is usually sown to grass, and forms a very nice lawn, while at regular distances apart, near the walk, are planted tall evergreens, and in a row up and down the centre are set out some of the finest shade-trees. On the opposite side of the track no buildings are allowed. There is usually a large square, a field sown with grass, bordered with a neat fence and planted with shade-trees.

The good effects of such an arrangement are obvious. The elevated walks, both at the depot, the wood-house, and freight-house, make the loading or unloading of freight very easy, while it is also easier to alight from a wagon or to reënter. These squares are often continued beyond the outbuildings by the side of the railroad track, surrounded by a fence, and the street also well planted with shade-trees, for distances of even one thousand feet.

These little grassy evergreen squares, by their fresh beauty and ornament, are a perfect delight to the traveler, as the train stops, to look out and see. Their influence is that of an educator of public taste, while none can fully estimate the inducements it offers to the native townspeople to beautify their own homes.

Such little ornamental gardening costs but a trifle, and goes far toward making a road popular, and is money well invested.

We hope to see public attention directed to this subject with more and more definiteness and appreciation.

Rural Taste.

IT is a common mode of thought to assert that the farm and the home should be the spot in which a taste for rural ornament can be most appropriately and successfully developed. This is true but as a sequence from other beginnings; and we are disposed to attribute the education of one's taste as much to the associations of the school-room and grounds as to home associations. If in our country districts the old, shaggy, red or brown weather-beaten structures for school-houses were replaced with buildings of an ornamental style of architecture, with grounds appropriately laid out and planted in something simple, perhaps nothing beyond a pretty lawn plat, surrounded by a neat fence, and planted in evergreens, we feel sure that the constant sight of this pleasant object, and the associations naturally formed in the mind of the scholar, would do far more good than centuries of lectures or libraries of books. The taste of a child comes from the school-room as well as the home, and goes from the one to the other. Hence we make a plea not only for the improvement of our country school-houses, but for the importance of extending this subject even beyond, to COLLEGE GROUNDS. In the minds of college managers it seems only necessary to secure the ground, "the *terra firma*," and then build their massive walls; and when that is done, all is done. Not so, indeed. Thousands of young men and women frequent these grounds day after day and year after year. If the grounds are well laid out and tastefully displayed, there is an opportunity presented for the development and culture of a refining taste, such as no musty literature ever possessed. It is practical, too, and will insensibly help to mould the future disposition and character, and act on it for years to come. Let us then remember that if we would have rural art and taste become widespread, we must begin with the youth of the country, and at the fountain-heads of education.

Hints for the Month.

The Garden.

HOT-BEDS are to be closely watched, to see that the tender plants do not suffer from too great concentration of the more vertical rays of the sun. Give plenty of air, to harden off the plants, and transfer to cold frames and the open air as fast as it is safe to remove the plants, so that at the end of the month the bed may be broken up and the manure used for other crops. A little negligence in giving air or shading, now, neutralizes all previous care and attention.

Prepare hills in warm locations, by excavating large deep holes, and put in two shovelfuls of fine old manure; mix and cover it with fine soil, and into these transfer your cucumber, squash, and melons started in the hot-bed on sods the last of the month. Set three plants in each hill, cover them with hand-glasses, or make a square box without top or bottom, and set these boxes around the plants, and cover with a light of window glass, and shade till the plants get established, when the glass can be lifted or removed days, to be replaced nights. These boxes are excellent, covered with thin muslin, in protecting from the striped bug, etc.

Plant peas, according to requirements, once a week during the month for succession crops. Early in the month plant Champion of England, Marrow-fats, and other late sorts, giving them a good generous soil to grow in; fertilize with well-rotted compost, or guano, using care to mix it well with the soil before sowing the seed. Put brush to them as soon as a growth of two inches is attained, as if left to fall over they seldom recover, and the earlier the brush are put up the more naturally the vines incline to them. Set them firm in the ground, and weave the tops together neatly, forming a thin, even row, which will resist the effects of wind or storms when the vines have attained their growth, and cover them.

Sow seeds of all crops desirable as succession, such as radish, lettuce, etc. A quick, warm soil grows the best radishes, as unless they grow quick they are tough and woody. So lettuce needs to grow quick, and head up well, to be crisp and tender.

If the asparagus-bed has had proper care we may now have a supply. It is fit to cut when grown three inches; when larger, it is apt to be tough and stringy. Care is needed in cutting not to injure the buds, and to be sure and cut an inch or two below the surface. It is better to cut the shoots with a sickle-edged knife, for then the stumps of the shoots bleed less than if cut with a common knife with a smooth cut; although a common knife will answer if the shoot is cut with a slanting cut, and below the surface. From the hot-bed, cold-frames, and in sheltered warm beds we may now have a fair supply of lettuce, radishes, cress, and other salads, if care has been given to forwarding, etc.

Make beds in rich soil, in warm locations, and sow seeds of salads, mustard, spinach, etc., once a week to insure frequent, tender growth.

Now is a proper time to make the beds and plant artichokes; of these we have the true artichoke, produced from seed, which grows an edible head, thistle-like; and the Jerusalem artichoke, which produces, and is grown from a tuber similar to the potato; the first is one of the refinements of horticulture, recommended only to the curious in such matters. The Jerusalem artichoke is grown for its tubers, which are used raw, pickled, or sliced and eaten with vinegar, similar to any salad. The culture is simi-

lar to that of the potato, but much more productive. It is always free from disease, and will grow in any soil, or almost any situation, and will endure our northern winters, on dry soils; and when once planted and in the soil is apt to prove troublesome in exterminating, when desirable, as small tubers will be apt to be overlooked, and they will even send up their woody stem and coarse harsh foliage from sprouts broken from the tubers. A field stocked with this vegetable would afford excellent feeding-ground for swine, as they are quite nutritious, and the swine would work busily in digging them.

Prepare beds in rich deep soil, and plant out horseradish sets. Take the small roots, one fourth to one half an inch in diameter, and cut them in six-inch sets; make a hole with a dibble ten inches deep and eighteen inches apart, and drop one set in each hole, small end down, or it will form ill-shaped roots, and cover them, pressing the soil close around the whole length; planted thus, and fair culture given during summer, we may have good-sized roots for digging late in fall or early the following spring. It was formerly, and to a large extent is still, popularly supposed that in order to grow horseradish we must plant the crowns; but such is not necessary, as sets, as above, produce much smoother roots, and grow nearly as readily when well planted.

Sow in suitably prepared beds parsley seed; as this is to remain several years in the same spot, it should be planted in some place from whence it need not be moved, or interfere with other crops.

Sow turnip seed for early table use, using wood-ashes freely. If worms attack the root, it will be better to dig up the ground and plant to other crops, as it is useless to attempt to grow turnips when worms make their appearance among them. The English white is the best variety. Early turnips are partial to an early, sandy or gravelly soil, made rich with decayed compost manure, ashes, and superphosphate. Sow in drills fourteen inches apart.

New plantings of rhubarb may be made early in the month; make the soil deep and rich; a rather moist than dry soil is preferable. Plant the roots four feet apart. A medium-sized variety is the best for family use. A variety which cooks tender and melts the most when stewing is preferable to the very large and coarse growing varieties. It is better to have an early and a later variety. The catalogues will indicate varieties. Established varieties will furnish leaf stems ready for use during the month; pluck off the stems by a sidewise jerk, without injury to the plant left; do not pull too close to weaken the root unnecessarily. Keep the seed-stems cut out, not allowing any to run up.

As soon as settled weather comes, and the ground will work mellow, plant dwarf beans, for early, and once a week for succession; these being more hardy than the pole or running varieties, and easier protected from frosts, should be planted first, and early. After fear of late frosts set poles firmly in the ground, six feet high, four feet apart, and plant the beans around them six to a hill. In planting Limas, leave them till the last, as they are the most tender and difficult to start, and stick them, eyes down, three or four inches away from the pole—many fail from planting so close that the water dripping from the poles rots the seed—and cover them with half an inch of fine soil; if the soil crusts, look to it and break it as the bean begins to germinate. Transplant those started on sods, in the hot-bed, the last of the month.

Where not already done, transplant early cabbage into well-prepared rich soil, as soon as the ground can be made ready for them. Unless the soil is impregnated with lime, it will be advisable to apply it in moderate quantities. The tendency to produce club-foot is remedied by a fair proportion of shell-lime in the soil, as we find by experience and the record of others. Seed may be sown in the open ground for medium and late crops.

Make beds in the open garden, enriched highly with hen manure or guano, and sow seeds of capsicum, peppers, cayenne; there is yet time for the ripening, from seed, the squash, bell, and sweet mountain varieties, if planted early in warm, rich soil. Transplant those started in the hotbed, pots, etc., the latter part of the month, when late frosts are past. The pepper is a tropical plant, consequently must be treated as a tender plant in a northern climate.

Well-grown cauliflower is a refined cabbage, and can only be grown in rich, well-prepared soil, and then only when *good* seed is used and *good* culture given. The gardener who produces perfect cauliflowers may well be proud of his achievement; the excellency of a good dish of this vegetable is well worth the risk of several failures. The culture is the same as that of the cabbage. It must be grown *early* in the season before dry weather.

Repeat plantings of sweet corn in the open air once in two weeks, after the soil will work dry. Transplant that started in the hot-bed, soon as safe from frosts. Mexican, Crosby's New Early, and Trimble's are good newer varieties and excellent. We have tested Mexican and Trimble's, and can ask for no better, either for eating or productiveness. There are two varieties of the Mexican—one a white cob, and the other red; the white is the sweetest and best.

Sow seed of celery in rich mellow soil, thoroughly pulverized and well filled with *fine* stable manure, as soon as the ground will work dry.

Sow seeds of the Kohlrabi—another variety of the cabbage tribe—in the open ground for the main crop. Care for, and cultivate in every way same as the cabbage.

Sow seeds of the Okra plant in drills, two feet apart for the dwarf sorts, and double that dis-

tance for the tall kinds. This is a tender plant, and the seeds should not be sown till the soil is warmed up somewhat. It is a free-growing plant of the easiest culture, and an abundant bearer in ordinary garden soil. This plant is grown for its long pods, which, used when young, are tender and nutritious, in soups, stews, etc., for which purpose they are used.

When the ground is dry and warm, and late frosts are past, plant seeds of all kinds of melons, squash, etc., giving a good shovelful of well-fermented compost to each hill, after broadcasting and plowing under a good dressing. Put the seed over the manure, in the hill, first covering an inch of soil over the manure; put in seed enough to guard against the contingencies of failure to germinate, worms, bugs, etc., and plant at distances according to growth of vines, 4 to 9 feet.

Toward the close of the month transplant into the garden tomato plants, set them four to five feet apart, mixing a shovel full of fine old compost to the hill in the soil. Shade till established, and then keep the soil fresh stirred, applying a sprinkling of guano around each plant.

A very good pickle is made from the pods or fruit of the martynia, which it produces in great abundance. Seed are sown in the open ground early in the month, and when good strong plants are grown they are transplanted to hills two feet apart each way.

A good sharp, light, and bright hoe in good hands in the garden is one of the best antidotes for weeds, which so often prove the bane of good crops, if used by one who goes with his eyes open.

The great secret of success in the garden, after a good location, is in plenty of good manure judiciously applied, constant working, and *good* seed, though last named, is not the least, but should stand first.

In all garden operations we should have an eye to the future, and few things conduce greater to success than a good compost heap, which the thoughtful gardener will not fail to commence early, and add to it every thing capable of being converted into plant food.

Fruit Garden.—If, from any reason, planting here should have been delayed, no time should be lost in planting out all sorts, as in many localities plants will have commenced their growth.

Plant out strawberry plants as directed for last month. Early planted generally make the best beds. Mulch old beds with cut straw, having first cleaned them of weeds, grass, etc., and raked in a good dressing of wood-ashes. In planting new beds it will be found that the more delicate varieties of fruit are not always the best for general culture, however desirable they may be for the table. Sow a sprinkling of guano over old established plants.

Set out raspberry beds, first having cut back the canes to four or five eyes. Select plants with an abundance of fibrous roots; set the roots four or five inches deep in the soil, planting at the same time stakes, if to be used, so as not to injure the roots in driving. The best variety depends upon the location, soil, and care accorded them; what proves the best in one locality, and under the care of one, may prove the poorest in another soil and cared for by another.

Put up and tie to the trellises grape-vines, using care not to injure or break off the buds; use soft twine or bass matting for tying. Cuttings, if not already planted, should be done at once, but layering is a superior mode of propagating. Preparation for layering can be made as soon as the buds begin to start. Take a strong cane, which has been previously cut back to about five feet, open a trench six inches deep and the same width, lay the cane in the bottom, pegging it in place. When the shoots have started three or four inches, select the strongest, put stakes to them and cut the cane about half off with a slanting cut, fastening it open midway between the shoots, and fill in about two inches of soil, covering the cane; in about a week fill in as much more soil, and in a week or two after fill up level.

Transplant currant bushes before they start into leaf. It is said—with how much truth we do not know—that covering the ground around and under the bushes with an inch or two of coal-ashes will tend to prevent the ravages of the "currant worm." A trial would lead to no harm, but result in good even if it did not prevent their attack.

Finish up planting of dwarf fruit-trees soon as possible, giving them ample room to extend their roots. Head back and prune to keep them dwarf, compact, and evenly balanced.

Great vigilance is necessary to keep insects in subjection; on many kinds of fruit-trees, vines, etc., they commence an early depredation, or provide for an increased number by depositing their eggs, so that they should be looked for daily, and every means used for their destruction.

The fruit garden should be kept clean of weeds. The hoe properly used is a good encourager to the development of both fruit and vine, while it keeps out of sight all unsightly weeds.

Orchard and Nursery.—The pruning over, there remains to hunt out the caterpillars, destroy the nest-worms, fight the canker-worms, and do up the grafting, etc. The present month is as good a time for grafting pip fruit as any during the year, as the sap is in full flow. The art of grafting is not a difficult one, and there is no particular reason why any farmer may not qualify himself, and do his own. The main secret is to place the scion in the stock so that the bark of each will come in contact, and cover the cleft with wax, so as to exclude the air and

wet. Use only such scions as are fresh and plump, with full fresh buds.

The little clusters of insect eggs glued to the branches and twigs overlooked, deposited last year, will be hatching out now that warm weather has come, and the worms will be forming their nests, scarcely perceptible at first, and defoliating the trees. Close attention will be needed to wipe them out while it may be done with the least trouble. Moths of various kinds will begin to fly evenings, and be providing for continuing their species by depositing their eggs where, when the young come out, they may gain their sustenance without traveling far. Great numbers of these moths may be destroyed by placing bottles of sweetened water about the orchard, or fixing burning lamps in pans of soap suds about the trees where they frequent evenings; but there is danger of destroying insect friends as well as foes, for both will seek the light and destruction.

If the stocks of budded trees have not already been cut back, if the buds are plump and sound, cut back to three inches of the bud, the portion left furnishes a fine support to tie the new shoot to, if necessary, when it starts into growth.

All newly set trees will be benefited by a mulching of some kind to protect their roots during a dry time, which frequently happens in the spring or early summer; saw-dust, spent tan, chip dirt, or litter of any sort, is good; but best of all a frequent stirring of the soil; this gives the most effectual mulch and prevents all drying out, while it is a great encourager to growth.

The careful orchardist will seldom find use for the saw and hatchet in pruning, for he will be on the look out, and when a shoot starts where it will be likely, if allowed to grow, to mar the proportions of the tree, or interfere with other branches, the pocket knife is sufficient to remove all such.

Apply ashes to peach-trees, and dig out the borer with a sharp-pointed knife. If affected with the yellows, dig them up and burn root and branch, or, if disposed to experiment, remove the soil about the trunk to expose the roots, and apply on the exposed roots half a peck to a peck of hot ashes, right from the hearth; no matter if there be some live coals of fire mixed with them, return the soil, and note the result.

Finish up planting and cleaning up in the nursery, and set the cultivator going to keep down the weeds, and encourage the growth of the young trees.

LAWN AND FLOWER GARDEN.—The better time to transplant evergreens is when they begin to make a growth, but it should be done with the least possible exposure of the roots; for, unlike deciduous trees, they seldom recover from exposure. Too much pains can not be taken in preserving the roots entire, keeping them moist, and in resetting.

Deciduous trees and shrubs should have been set last month, but some kinds may yet be transplanted, if due care is used.

The lawn will need mowing as soon as the grass has made two or three inches growth, or sooner. Keeping the grass cut close tends to keep it thick and soft, giving it the look of a soft, green mat.

In selecting plants and seeds for the lawn and flower garden, regard should be had to the purpose to be served. As much depends upon the selection and arrangement as upon the plants themselves, and frequently more. We want plants adapted to particular purposes, plants that will give us a constant brilliant show, plants to mass, plants for hedges, plants for their fragrance, for their foliage, plants for climbing to cover unsightly objects—buildings, covering fences, etc.—plants for early and late flowering; and when we get them, if they are not arranged so as to best serve the purpose desired, we are disappointed. If trailing plants, adapted for hanging baskets or pots, are put in the ground where show is desired, disappointment results.

Many are abandoning the culture of annuals from the trouble involved, and are substituting bedding plants, etc.; but there is yet great beauty and show that we can not get from other plants that may be had from the annuals, so we would advise a fair proportion of annuals, and, for most varieties, May is quite soon enough for sowing the seed; and here comes a very delicate task.

In order to be successful in having seed germinate and grow, we must understand the nature of the seed planted, its requirements, and follow to a certain extent natural laws in planting. If the seed is from a hardy plant, little trouble is usually experienced; if a half-hardy or tender plant, much more pains, and much good judgment is required in planting, and at the right time. Half-hardy or tender plants must not have their seed planted in cold or wet soil; tender plants should be started in the hot-bed or green-house; half-hardy should not be planted in the open air till the soil becomes warm, so that the seed may germinate and grow, and not rot, as it would in cold soil.

A failure frequently, perhaps the most so, results from planting flower seeds too deep or too early, before the soil comes into proper condition; it is either too wet and cold, or too dry. Nature requires warmth and a suitable degree of moisture, as well as air, in order that seed may germinate. If a seed is buried too deep, it will not germinate; if put in a wet cold soil, it rots; a dry one, it fails, or if it germinates at all, it perishes before the young plantlet can get hold on the soil or ascend into the sun and air. All seeds have stored up food to support the young plants to a certain extent; if this be expended before the plumule can reach the sun and air, a failure results; seed usually have this food stored in proportion to size, so that gener-

ally seed should be covered in soil in proportion to size.

Annuals started under glass may be turned into the open border the last of the month, or early in June; and most varieties may be sown in the open air during the month; and here the question arises, What annuals shall I plant? The catalogues will present a long list, so that the novice is puzzled in selecting, and even the amateur is at fault, frequently, to select from the novelties presented. The following list will embrace some of the varieties that may be safely recommended for general culture: Sweet Alyssum, Snap Dragon, Asters in variety, Clarkias, Convolvulus, Dianthus or pinks, Gilias, Martynia, Linum Grandiflorum, Mignonnette, Marigolds, Nemophilas, Pansy, Phlox Drummondii, Portulaccas, Petunias, Stocks, Nasturtium, Whitlavia, Zinnia, Candytuft, with some of the following as everlastings: Acroclinum Rosum, Rhodanthe Manglesii, R. Maculata, Atrosanguinea, Maculata Alba, Helichrysum or straw flower, in colors, Xeranthemum in variety, Ammobium Alatum, and the old Globe Amaranth, Gomphrena Globosa.

Some of the more hardy bedding plants, such as verbenas, petunias, etc., may be put out the last of the month.

Bring out the dahlia bulbs and plant them in sand in a warm exposure, and when the sprouts have made three to six inches, take them off and pot or plant out where they are to grow.

Plant out Gladiolus and other spring bulbs, not already put out; give Gladiolus good exposure to the sun, and plant in clumps of half a dozen in good soil.

Small Fruits.

The Hornet Raspberry.

Wherever it can be grown, and well taken care of, well protected during the winter, the Hornet Raspberry will produce abundant fruit. The public have had very little accurate information concerning this variety for the last two or three years. Even the latest notes of Mr. Fuller concerning it have been in his *Small-Fruit Culturist*, wherein he describes it as "very large, conical, deep crimson color, grains variable in size, juicy, subacid, good, moderately firm flesh; canes very strong, erect, spines short, purplish, fruit-stems very long—productive," but adds that "it promises to be a good market variety;" beyond this the public have had little information. Major Freas, of the Germantown *Telegraph*, has given it a practical test on his grounds, and recommends it highly. We give his report:

"Having fruited this variety of the raspberry for years, we are willing to risk our pomological reputation in pronouncing in its favor, and recommending it for general cultivation. It is the largest and most beautiful of all the family, and comes next, or side by side, with the Hudson River Antwerp and Brinckle's Orange in point of flavor. It appears to be a robust grower, and it is a most abundant bearer; besides, it continues to bear for nearly twice the length of time of others. It throws up shoots or new canes sufficiently numerous to supply an extended bed in two years.

"The Hornet is a French variety, and is not quite hardy, requiring to be laid down on the approach of cold weather. But this scarcely amounts to an objection, inasmuch as we believe it to be the true policy in the cultivation of all raspberries that they should be pruned in November, just as they are desired to be in the spring, laid down, and covered with a few inches of earth. Ours have uniformly turned up in the spring, green to the very tips, and always producing excellent crops.

"The Hudson River, though a berry of large size and good quality, is not a free grower; indeed, some people can do nothing with it. We have also met with some difficulty in propagating it, and although we have been growing it for some years, we have yet only a small bed.

"The reason the Hornet has not become popular for market is simply because it has to be protected in winter; but this is not a valid objection to a berry of such character. One man ought to lay down in a day half an acre, and being laid down they seldom if ever fail of producing a heavy crop. Besides, it will sell for about twice as much as any other variety."

Raspberries.

Writers in the agricultural press for the past three years have urged upon farmers and fruit-growers the necessity of the culture of a greater *variety* of fruits in their gardens or on their farms, and beginners in fruit culture have responded promptly. Many a grower, who pinned his faith solely on a few acres of strawberries three years ago, now finds the propriety of a *mixed* system of fruit culture and more kinds of fruit. Near the town where our own farm is located, two years ago there were no raspberries of any kind whatever, but now more than forty acres can be pointed out.

One of the most puzzling things to a beginner is to make a good selection of varieties, and the more he consults standard authorities, or the more he learns by inquiry from leading authors and pomologists, the worse is the confusion. Each has his favorite, all are full of caution as to the adaptation of each variety to different soils and climates, and likewise the firmness of the berry for carrying to market. The Hudson River Antwerp is considered, in New-York market, the standard Red variety, and yet outside of a limited strip of land, up and down the Hudson River, in the neighborhood of Poughkeepsie, how seldom it is heard or spoken of, and how little it is grown!

In the West we find the Kirtland, Naomi, or Brinckle's Orange becoming popular, but in the southern portion of our Middle States there has been a scarcity of such varieties as could adapt themselves to the light soils and withstand the scorching sun. The black-caps thrive well everywhere, and in their wonderful natural habit of adaptation to all soils and climates, East or West, they are a perfect blessing to both grower and consumer. All kinds of black-caps are worth cultivating. To those who can not afford the higher prices for the latest novelties, the old standard sorts of the Doolittle and Seneca will be quite sufficient. Of the *red* raspberries, public opinion seems to have settled down on the Philadelphia as the *surest* to grow. The quality of this fruit varies greatly between a Northern and a Southern cultivation. In central New-York, growers find no fault with its growth, but in comparison with others of better quality the taste is quite flat and insipid; but in Southern New-Jersey, south of Philadelphia, its growth and flavor are alike unsurpassed. In those sections, for all qualities necessary to make a perfect market berry—hardiness, productiveness, firmness of flesh, and fair quality—the Philadelphia is the standard sort. Other varieties are being tried, but the progress is not rapid. The Clarke is most promising, yet very little fruit has been produced. It has been largely planted, and seems to adapt itself to all soils and withstand alike the heat of summer and cold of winter. It is feared that the berry is not firm enough for shipment long distances.

The above four varieties we can unhesitatingly recommend to all cultivators in all parts of the United States as possessing the largest number of good qualities for general cultivation, and the only kinds which as yet possess the greatest probabilities of success.

The profits of raspberry culture remain yet to be determined. If the grower obtains only $100 per acre for his first crop, he must not be disappointed. If he obtains $300 to $500 for the second crop, he can feel satisfied. We do not think that the average receipts of raspberry plantations will vary far from these figures. There are individual cases, certainly, where as high as $800 and $1000 have been realized per acre from small patches, but we have never yet heard of a full acre yielding exactly that sum. These high figures are unsafe estimates. An amateur who adopts them as his guide will surely meet with disappointment.

Pruning Raspberries.

The following letter was received at the Fruit-Growers' Club, New-York, in answer to a previous communication from a correspondent. (See March Horticulturist, page 91.)

"I notice the inquiry about pruning raspberries, and the answering instructions of the 'Club' *not* to summer prune. My experience is quite the reverse of this. I find it much better to *check* the growth at the required height by nipping the growing tips, rather than to leave them to make a slim, rambling growth, and in fall or next spring prune off and *throw away* the excess of wood, which should and could have been incorporated in the bush, making it stronger and more productive. This is particularly needed in the sorts that propagate from the tips; though "prune for fruit" is the word among experienced growers for *all* varieties as my observation extends. The lower you can get the bush and the broader on the top, the more fruit—*sure*. The bush is stronger to sustain itself and its load of fruit; hardier in winter, (because possessing more vigor and being nearer the ground,) and not so much affected by winds, which not only test the plant's powers of endurance, but sway and break the canes of the higher bush. Again, in summer the dense, broad top is a shield to the roots from the heat of the sun, keeping the ground moist and cool, thus greatly helping out the fruit during a drought. Check the upward growth; then, *whenever* it is high enough, say two feet, and the side growth when sufficient breadth is obtained, according to the distance of plants apart, and amount of room desired between, not pruning after September first, but leave the *final* shortening in and shaping of the bush till after the season of growth is passed. I never saw a plantation pruned in this way and properly cultivated fail of a good yield, even during severe droughts. R. Johnston, Jr.

"Palmyra, N. Y."

The Naomi Raspberry.—In answer to the inquiry whether, after all, the Naomi is not really the same as the Franconia, we give here the opinion of F. R. Elliott, as expressed lately in the *Ohio Farmer*: "I have no hesitation in saying that whoever purchases *true* Naomi will have no cause to regret the outlay. The cane is somewhat like the Franconia, not quite as stout or strong, and for many years has proven here on the Lake Shore perfectly hardy, even to the tops. The fruit is about the same size as Franconia, a little more conical, grains not quite as large, equally or perhaps more firm, not quite as acid, but richer and of better flavor." He admits that there has been an unaccountable mixing up of plants and seedlings in the garden where originally grown, and on visiting it nearly ten years ago to obtain some plants, found a large number of seedlings of indifferent value, and only one in the entire row that appeared to be the genuine plant, and accordingly was described and figured as such. Since then quite a number of plants have been sold, and as naturally would happen, "considerably mixed." Whoever has the genuine plants, beyond a doubt, will do well to keep them genuine, and satisfy the public of the fact.

THE COLFAX STRAWBERRY.—A fruit bearing the name of one so popular and well appreciated by the people of the United States ought to be of the very best character and nobly sustain its high origin. Some fifteen years ago it was introduced into South-Bend, Ind., among a lot of other seedlings, by Schuyler Colfax, who had received them from a friend. Being well cultivated, its good qualities became well developed, and attracted notice, so that good fruit judges considered it quite an acquisition. It has not attracted any special attention outside of the locality of home growth until within the past year, when it has been largely advertised as a leading novelty. The description is as follows: "Fruit of medium size, symmetrical and uniform, hanging in clusters; color, dark crimson; flavor, subacid; has a large percentage of juice; season, medium to very late. The plant is hardy, very vigorous, and with good care and culture yields bountiful crops. It produces larger shoots than the Green Prolific or the Agriculturist, and has a dark-green luxuriant foliage which does not burn in summer." It is proper, however, to say that candid observers declare it too soft for a market berry, lacking sufficient firmness for shipping and good carriage, while in flavor it is not quite equal to some of the varieties already cultivated. Nevertheless, it has not yet been generally tried, and its good qualities may be better developed in one soil and climate than another, hence we think it wise to await further reports before giving a definite judgment.

EVERBEARING STRAWBERRIES.—We observed, a few weeks since, in the numbers of a couple of our Western journals, illustrations of a new Mexican Everbearing Strawberry, with a column and a half of indorsements and descriptions. Our first thought naturally was to cry, "*Look out for humbugs!*" but some one is ahead of us, who says: "I have seen the strawberry mentioned above, which is termed the Mexican, which I think is nothing more than the Alpine. Persons wishing to have strawberries bear through the season have to use different cultivation, as is mentioned in Mr. Pardee's work on the Strawberry, which will satisfy any one who is not posted on the cultivation of strawberries. Now, I have not the least doubt in my mind but that persons buying plants of this Everbearing Strawberry will make a failure: 1st, because it is no more of an everbearing than other sorts, and 2d, because they do not know how to grow them, as the soil has at least one half to do with it, which will be found out after trial."

STRAWBERRY PLANTS.—Growers desiring to extend their beds by transplanting runners will do well to remember this simple rule: The first runners from any plant are the weakest, the second but little stronger, while the third are best of all. Cut off the first and second growth of runners after fruiting, but leave the third root, and they will invariably make good, strong, healthy plants.

The Orchard.

MANAGEMENT OF ORCHARDS.

C. BUTTERFIELD, of Sidney, Maine, writes to the *Maine Farmer* a sensible letter on his method of managing his orchards, which is sufficient to prove that, in regions of the country where there is the greatest difficulty in raising fruit, there the best care is bestowed on the trees. Every farmer will be pleased to read and remember his letter:

"From close observation I have learned that common lime, or old plaster or mortar, is an excellent thing to scatter about the trunk and roots of apple-trees. It is true, old mortar is not always at hand, but to those that do have it let me say, use it in your orchard. One thing truly is needful in the management of young orchards. That one thing, I believe, is great care and study in pruning, which should be done very early in spring. Do not trust your trees in the hands of a careless, uninterested man, who knows nothing about symmetry or proportion, or the use of a saw or knife. As a rule of my own, I make the cut or wound in pruning as little as possible, and the smoother the cut the better it is. I have noticed many young trees grown up like bramble bushes, not even a chance for a small boy to get into the tree to pick the fruit, if such trees ever have any fruit worth picking. Now, here is where the great error lies among many who have young trees. It is in allowing them to grow at random when very young, then having them grafted by some one who cares more to line his own pocket than he does for the interest of his employer; and lastly, in not pruning. A tree may be very thrifty, even after it has had its top taken off by the grafter, and every scion may grow rapidly; but that is no sign that it is, or will be, a well-shaped tree, or one that will bear much fruit, unless the pruning-hook is carefully used. Men are too tender-hearted oftentimes in taking away a healthy scion. Where two scions have been set in a stock, and both have grown equally, it needs some courage to cut one of them off; yet, I have found that this is absolutely necessary for the good of the tree, and in cutting out such scions I use the same judgment that one would in thinning his corn the last time. Some cut the scion off about an inch above the main stock, leaving an ugly-looking stump or knot sticking up to be healed over by the other scion. This, I think, is wrong. A better way is to put the saw between the scions, with the teeth down to the bottom of the one you would cut off; lean the saw against the other, or nearly so, and saw the scion off with a part of the solid stock, on a bevel or slant. This will allow the remaining

scion to expand without hinderance, and the healing will be done mostly by the old stock, and will generally make a smoother limb after it is well healed than by any other method with which I am acquainted.

"Another thing is too often neglected after pruning, and that is paint. The inside or wood of a tree is protected with its natural covering, bark. Where this is entirely removed the wood will crack, unless wax or some substance is used as a temporary covering. I use good thick paint about the same color of the tree, which prevents the wood from cracking, and will not fall off."

Culture of the Quince.

N. Ohmer, of Dayton, O., contributes to the *Country Gentleman* his experience in the care of quince-trees:

"Some ten years since I began to turn my attention to the cultivation of fruit, for pleasure and profit, and the then neglected quince I made a specialty, planting three quarters of an acre, at ten feet apart each way. The fourth year after planting, I sold quinces enough to pay for the trees and their cultivation, and each year since, with but one failure, I have had good crops, of course yearly increasing its quantity, and I might say also its quality. The latter no doubt is on account of the improved cultivation and fertilization they receive.

"The first year I offered quinces for sale in quantity, I found a difficulty to dispose of them, as it was then known only by a few that the quince was one of the most delicious fruits we had for stewing and canning, as well as for jellies and preserves. Customers annually increased their orders, so that I last season disposed of my crop of about three hundred bushels, from the three quarters of an acre, at from $2.50 to $3 per bushel, net.

"Those of our readers who attended the Ohio State Fair, last fall, when passing around Fruit Hall, will remember the pile of quinces that swept all the premiums then offered on them. These were mine, and I could have shown many barrels of the same kind.

"I was informed, when I planted my first, that ten feet each way was the proper distance to plant them. I obeyed the rule, and for the last few years the limbs have grown into one another, so that it is almost impossible to get through the orchard. I have since practiced, and would unhesitatingly recommend, fifteen feet as near enough to plant the quince in good soil.

"The tree is quite handsome when properly pruned, cutting out all interfering limbs within the tree, and cutting back such limbs as grow out of proportion. I spade the ground once a year early in the spring—scatter my coal ashes, about a peck around each tree, near the trunk. As soon as the ground is spaded, I scatter from one quart to three pints of salt over the ground under each tree; then again the same amount when the quinces are about the size of a walnut, half grown. Salt is a special manure for the quince, the best investment I make is the money I pay for the salt I scatter under my trees.

"The Orange is the best and first that ripens with me. Ray's Mammoth I highly prize, on account of its large, smooth, and handsome form, beautiful color, and good quality. The Pear Quince with me grows of good size, ripening after the Orange and Ray's; prolongs the season until cold weather; would not recommend the planting of them largely. My quince orchard now contains about five hundred trees, most of which are yet too young to bear."

Distances for Fruit-Trees.

One of the great horticultural questions of the day seems to be to determine whether the trees in our orchard should be planted as *distant* apart as ever, or *nearer than usual*. Several writers in The Horticulturist have recommended *close planting* as being not only the safest method of protection, but affording the best condition for perfect healthful growth. Others have recommended evergreens, and some have practiced the principle with partial satisfaction, nevertheless are slow to give a full decision as to its usefulness. A writer in the *Western Rural* (J. Weldon, of Rockford, Ill.) takes up the cudgel for close planting and argues as follows:

"I was somewhat surprised to learn that at a meeting of the Central Illinois Horticultural Society, after discussing the distance apart to plant apple orchards, the proper distance was decided to be thirty feet. To show my faith by my works, I would say that 33 years ago I set out 100 apple trees in rows 20 feet apart each way. Some 15 years thereafter, I made an addition of several rows on the north and east sides, making these rows just one rod apart.

"Some 14 years ago, a friend, about to plant an apple orchard on the prairie, applied to me for directions how to proceed. After discussing the matter, he employed me to go to a nursery, and make such a selection as I thought best. He set them 20 feet apart, with belts of cotton-wood on three sides. In a few years after, having formed the purpose to plant more trees, I suggested to him that, instead of planting the additional trees outside the belts of forest trees, he plant one tree where the diagonals of each square crossed each other, changing the lines of rows, and by so doing making the rows a trifle more than 14 feet apart. It is generally conceded that but very few on our prairies have as thrifty and as promising an orchard as has that friend.

"From twenty to thirty years ago many apple orchards were planted on our prairies. Some of the trees were put as far asunder as 30 or 40 feet. Of such very many less than half those

trees are now alive. In one orchard in particular, which was taken from the same nursery as was mine, but I think was set nearly twice as far apart, I doubt whether more than one fourth part of those trees are now alive, yet but one of my first planting is dead, and that one died through my own folly in cutting off two of the principal top branches some twenty years ago.

"Were I now to plant an apple orchard on the prairie of Northern Illinois, 15 feet is as far apart as I would have the rows, and in Central Illinois 20 feet would be my greatest distance, even if well protected by broad belts of evergreens, and notwithstanding the residents there go for much less than half as many trees to the acre."

New Apples.

J. C. Howe, of Lowville, Lewis Co., N. Y., sends scions of several new apples, which originated in his section and are highly esteemed:

"Two varieties of apples, of which I send scions, are both known to have originated with an amateur fruit culturist who, many years ago, resided here—Dr. David Perry—and the scions herewith sent I have obtained direct from the trees in the doctor's old orchard.

"The fruit has been known with us for many years, and both varieties have an established reputation for superior excellence as table or eating apples.

"The 'Perry Red Streak' is a medium-sized apple, improving both in size and flavor by cultivation, of a flattened form, and smooth exterior, of a bright reddish color, resulting from an abundant supply of vermilion stripes upon a brownish green. These red streaks strike through the flesh, which is a pure white, nearly to the seed-case. The flesh is of a most delicious, spicy, subacid flavor; small seed, thin skinned, short stem, deep-seated. The tree is a fair grower, spreading, hardly standing the rigors of our cold climate without suffering; is a profuse bearer; in fact, needs thinning for safety. The fruit ripens about the middle of November.

"The other scions are of a variety known among us as the Golden Pippin; but to distinguish it from the apple known by that name among pomologists, I suggest the name of 'Davenport Pippin,' out of compliment to the present proprietor of the old 'Perry orchard.' This apple is, if any thing, superior to the first mentioned, being above medium size, of rich, light yellow color, thin and delicate skin, crisp flesh, mild subacid taste, and similar to the Red Streak."

List of Twelve Best Pear-Trees.

Cultivators will find the following one of the very best selections for a list of twelve first-class pears:

Doyenné d'Eté, Rostiezer, Bartlett, Belle Lucrative, Louise Bonne de Jersey, Sheldon, Seckel, Duchesse d'Angoulême, Beurré d'Anjou, Lawrence, Dana's Hovey, Glout Morceau. The above are arranged in the order of ripening, and are all first-class pears for either market or family use.

Wash for Fruit-Trees.

Last year an experienced fruit-grower, the owner of a fine orchard near Niagara River, Western New-York, wrote us that in the care of his trees he had practiced one simple method with eminent success. He takes lye from leached ashes, mixes a little grease with it, heats it quite warm, and with a syringe throws it up into all parts of the trees, branches and trunk. It will effectually kill all kinds of caterpillars, and all kinds of worms that are either infesting the trees in nests or running over the bark. Trees treated in this manner were exceedingly healthy, beautiful and vigorous in appearance, possessing a smooth, glossy bark, and bore the best apples in the country. The remedy is easy and cheap.

The Vineyard.

What Varieties of Grapes shall we Plant?

That question has been asked thousands of times, and still without a definite answer. Grape culture, like all other departments of fruits, meets with varying success in varying climates on varying soils.

We have recently read an article on this subject by the editor of the *Grape Culturist*, St. Louis, Mo., which we consider so practical and sensible that we transfer it entirely to our columns:

"What shall we plant for market? For Northern climates we think it advisable to plant Mary Ann, Perkins's, and Hartford Prolific, not because they are *very good*, but because they are *very early*; and if people can eat and laud the Dracut Amber at the North, they can surely enjoy these. To these we would add, Telegraph, Concord, Rogers's Nos. 3 and 4, North-Carolina Seedling, and, for a white one, Martha. We think these would succeed *anywhere* almost; for our latitude and further South, we would add Rogers's Hybrids Nos. 1 and 8. They ripen late, have magnificent, showy berries, would, we think, keep well, and are productive and healthy.

"*For family use and the table.*—Here we take it for granted that quality is to be considered indispensable. While therefore it will do no harm to have a few of each of the former, and a pretty good dose of Telegraph, Concord, Rogers's Nos. 1 and 4, and Martha, you can not get along without Creveling, Maxatawny, Delaware, Salem, and Herbemont. These five, with Rogers's No. 4, are the best American grapes we have yet

tasted; better than the much lauded Iona, purer in taste and flavor; and if you want to add something exquisite to them yet, take the Alvey and Clara. They may not bear immense quantities, but they are so good that you can afford to give them a little room and extra care. For Northerners, the Herbemot, Clara, Maxatawny, and Rogers, No. 1 may not ripen, and we only can say that we pity them, because they can not know how good an American grape *can be*. They must leave them out, unless they intend to grow them in cold graperies, and for that purpose they would very likely prefer the Golden Chasselas, Black Hamburg, Bowood, Muscat, etc.

"*For Wine.*—Do you want to make the every-day drink for the million, the wine which is intended for every body, to take the place of beer, whisky, and other compounds, of which you can make the greatest *quantity*, but which will also bring the lowest price, in short, the *cosmopolitan* wine grapes? Then plant Concord, Martha, and Rogers's No. 1, if you live in a climate where they will come to full perfection. We may perhaps add to this the Clinton and Rogers's No. 9, as well as Telegraph, which promise to become valuable for this class. Or do you aim at high *quality?* If so, plant for *red* wine the Cynthiana, Norton's Virginia, and Creveling; for *white* wine, the Delaware, Taylor, Herbemont, Martha, Maxatawny, Cassady, Cunningham, Louisiana, Rulander, and Rogers's No. 3.

"These are the wines with which we can fearlessly challenge the choicest brands of Europe, and which are destined to make a name and a mark for American wines.

"We now come to soil and aspect. If you have an eastern exposure, with deep, rather moist soil, plant Concord, Martha, Rogers's Nos. 1, 4, 8, 9, and Telegraph. You may add to these Cynthiana and Norton's, as they seem to flourish everywhere. Ives's would also do here; in short, all the Labrusca family.

"If you have a southern aspect, a warm, porous soil, mixed with lime, plant Herbemont, Cunningham, Rulander, Louisiana, Cynthiana, and Norton's. They are 'children of the sunny South,' and will flourish best and make the richest wines in such soil.

"For north-eastern and northern exposures, also for sandy river bottoms, in short, for deep, rich, sandy soil, plant Delaware, Alvey, Creveling, Cassady. Our hot summer's sun seems to be too much for them, and their foliage often suffers from sun-scald in southern locations.

"Clinton and Taylor seem to be cosmopolitan in their habits, and will grow and flourish anywhere."

THE IVES SEEDLING.—The editor thinks very little of this, and says: "But very little of the Ives wine has been made *outside* of *Ohio*, and what we have tasted from there, as well as what we have tasted of it made here and in Illinois, has given us no very exalted idea of it. It may belong to the first class, to the cosmopolitan, cheap red wines; but no sample which we have tasted as yet has seemed to us at all worthy of taking rank in the second class. If *such* wine sells at $3 and even $4 per gallon from the press, we can only say that local patriotism must have been very much developed in the buyer.

"The *vine* seems to be healthy, hardy, and productive *after* the fourth year. But the grape is little better than Hartford Prolific, which it closely resembles. We shall be very glad, indeed, should the sequel prove that we were mistaken, and that the millions of vines now planted of that variety, *because* it took the premium of the Longworth Wine-House, should prove a profitable investment for their owners. At present, *we* would rather plant Concord."

GRAPES IN CONNECTICUT.

P. M. AUGUR, of Middlefield, Ct., writes us as to the progress of grape culture in that State: "It does not seem to receive much attention, and the impression is widely spread that it does not pay to attempt cultivating a crop so uncertain. Intelligent management and good culture are essential to success, and these are scarce qualities among the growers of this State. Where profit is expected and not quality, none but the hardy grapes should be set. The question of varieties is a puzzling one, for upon a judicious selection depends success or failure.

"The Concord, thus far in Connecticut, is in advance of all other varieties. None, I presume will claim any special merit for quality, but its great hardiness, vigor of growth, and productiveness of fruit of fair quality make it a favorite with the masses; in every exhibition that I have attended, its popularity is largely in excess of any other variety.

"A vineyard in New-Haven County, where Concords were planted, made a very heavy yield last year, whereas the Delaware, the Iona, the Creveling, and some other varieties were almost a failure.

"For an *early* grape the Hartford Prolific is the most productive: the fruit is of fair quality, and when the vines are well pruned and cared for, the bunches are tolerably perfect, and bring a good price in the market.

"I have seen a vine of this variety, covering the north side of a building, loaded with fruit, well ripened by the tenth of September; it is to be admitted, however, that the fruit drops rather easily from the clusters.

"The Diana is a good grape here when well ripened, and keeps remarkably well, but is too late to ripen every year.

"The Rogers Hybrids are hardy and promise well, particularly Nos. 1, 4, 15, and 19.

"We still want a grape equal to the Catawba in size and quality, as hardy and productive as the Concord, and as early as the Hartford Pro-

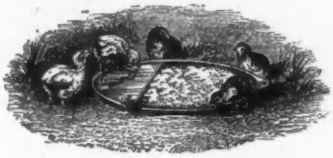


Fig. 1.—Chicken Feeding-Dish.

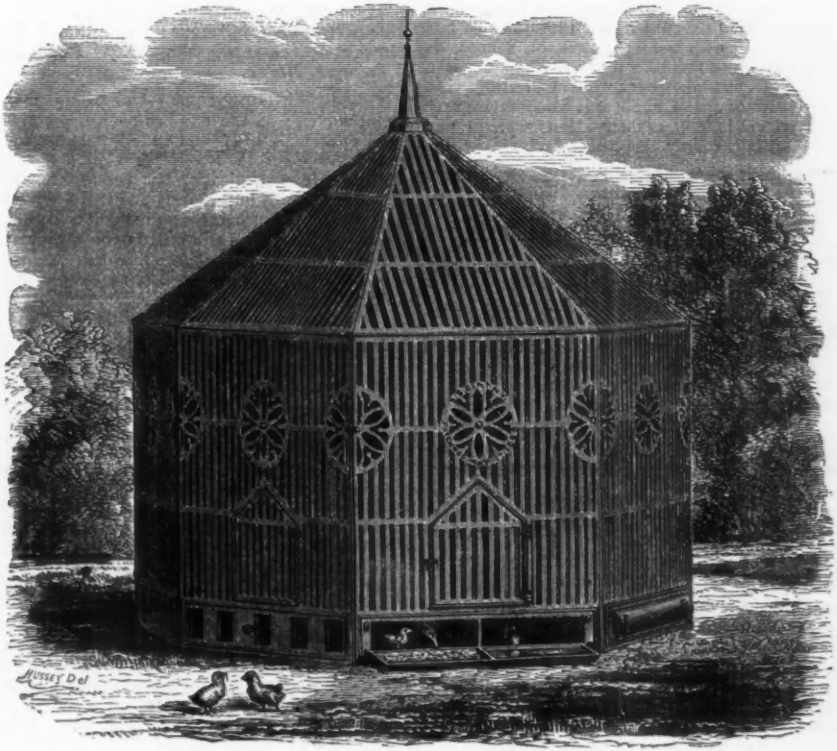


Fig. 2.—Ornamental Iron Chicken House.

lific. A new variety with these requisites will be a great achievement.

"In the mean time let us prove all things and hold fast to that which is good."

THE CYNTHIANA GRAPE.—This variety was highly praised in THE HORTICULTURIST and other journals in 1869, for its fine flavor, sprightly character, hardiness, and freedom from disease. Subsequent experience is bringing out fuller information as to its value. Samuel Miller, of Bluffton, Mo., communicates his experience to the editor of the *Germantown Telegraph* as follows "Just at this time, when the above-named grape is becoming known to some extent, and has proven to be a wine-grape of almost unsurpassed excellence, it may not be amiss to warn the public against getting spurious vines. Its strong resemblance to Norton's Virginia, to which it is closely allied, will give unscrupulous dealers an easy task to deceive. It has cost me considerable to secure a small lot of vines and wood for my own use from a reliable source. It is one of those varieties that are very difficult to propagate, but takes very well by grafting.

"North of 40½° I doubt if it would thrive very well, except in long seasons; but where it will do so, it is certainly very valuable."

Poultry.

WE give this month two very pretty designs of Poultry Fixtures. Fig. 1 is a chicken feeding dish, a very pretty and useful design, made of iron, with division for feed and for water.

Fig. 2 is a continuation of designs for Iron Poultry Houses, which we have hitherto given. This design, of course, is expensive, and intended to be made only to order, but its neatness and beauty will excite the admiration of all poultry fanciers.

Literary Notices.

MY TEN ROD FARM; or, How I became a Florist. By Miss Maria Gilman.

Whether or not the story be entirely true, and we much doubt the reality of it, still the volume is very interesting and shows what might be done by a woman in cultivating flowers. The capital appears to have been well laid out and the business judiciously managed, while the returns are very flattering. The book will be eagerly read by ladies.

HOW TO READ CHARACTER. By S. R. Wells New-York.

We once disbelieved Phrenology, but one day got our "*Bumps*" examined. The analysis of our character was so correct that we are forced to admit Phrenology is a useful science. The above volume is issued as an aid to all who are anxious to "*know themselves*," and if for better, it will go on a good mission.

THE PRAIRIE FARMER.—Among all our exchanges we find a few which we can sit down to enjoy a thorough appreciative perusal of. We mean the *Prairie Farmer*, which, since its enlargement, has been more active, enterprising, and interesting than ever. If New-England in her first horticultural experiences had enjoyed the possession of as good a paper as the *Prairie Farmer*, we think horticulture would be far more popular than it is even now. Western farmers and fruit-growers may feel thankful for so good a journal as the *Prairie Farmer*.

THE SMALL FRUIT RECORDER.—We have received the first number of this new journal, and are much pleased with its neat appearance. The field it aims to fill is a useful one. With good practical editors and writers, we think it will prove of great influence; certainly it will be a benefit to the entire community. Published at Palmyra, N. Y.

NEWSPAPER DIRECTORY.—One of the most useful volumes of the day has been laid on our table, entitled, *The American Newspaper Directory*, by Geo. P. Rowell & Co., this city. The expense of publication has been great, and the labor tedious, but there is presented such a valuable list of journals for permanent reference, that no business man can afford to be without it. The efforts of the publishers are worthy of high commendation, for its accuracy, neat style, and their business enterprise.

THE DEATH RECORD.—One by one the band of our early horticulturists, "old-time friends," is being broken. A few months since our much-beloved friend R. G. Pardee went the way of all the earth, loved and beloved, leaving a name and a record behind fragrant with useful deeds and pleasant memories; and now we have to chronicle the death of Wm. R. Prince, of Flushing. It was only a few days before his death that we received a kind note from his own pen, written with his usual force and energy; and then came the announcement of his death. Mr. Prince has accomplished much in his life that was good, entertaining, and useful in horticultural subjects.

A passionate admirer of flowers, he took a special delight in distributing them free by thousands of packages throughout the country, gladdening many families, and stimulating a taste in localities where perhaps it never had been known or developed.

Thomas Affleck also, of Brenham, Texas, one of our foremost Southern horticulturists, has laid down his shears and pruning-knife and gone beyond the silent influence of fruits or flowers.

Well may we say of them all: *They are dead, but their works do follow them.*